A STUDY ON

MANDHARA KASAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements
to the degree of

DOCTOR OF MEDICINE (SIDDHA)

Branch I MARUTHUVAM – POTHU

GOVERNMENT SIDDHA MEDICAL COLLEGE
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INTRODUCTION

Nature and human beings are the wonderful creation of God. Pray and thank the god for creating nature, lands , water , air , resources rain etc for living beings for their better survival . It is the ultimate duty of the human beings to protect the nature and live in hormony with nature

Siddha system of medicine is originated from Lord siva, the supreme God and he is also considered to be chief of siddhar's and chief of sangam poets

" சொல்லிடவே தேவிக்கு சதாசிவன்றான்
சொல்லவே தேவியும் நந்திக்குச் சொல்ல
நல்லிடவே நந்திதன் வந்திரிக்குச் சொல்ல
நயமுடன் தன்வந்திரி யசுவனிக்குச் சொல்ல
அல்லிடவே யசுவனியாத் தேவர் தாமும்
அகத்தியர் குரைத்திடவே யம்முனீந்தரன்
புல்லிடவே புலத்தியர்க் குபதேசிக்க
புலத்தியரும் தேரையற்குப் புகன்றிட்டாரே

-யூகி வைத்திய சிந்தாமணி 800

The siddha system of medicine was developed by the siddhars. Siddhars are not only physicians but also social reformers.

Siddhar's knowledge in the field of Medicine, Natural science, and literature are extra ordinary one.

The word siddhar is derived from the term " Siddhi" , means perfection or Achievement .

According to Siddha system of medicine human beings and nature are unseparable and inter dependent.

பாரப்பா பூதமைந்து மண் நீர்வாயு
பரிவாயு வாகாய மைந்தினாலே,
சேரப்பா சடமாச்சு மண்ணின் கூறு
செறிமயிர் தோல் என்பிறைச்சி நரம்பைந்தாகும்
நேரப்பா அப்புவின் கூறு திரமச்சை
நீர் மூளை சுக்கல மோடைந்தாகும்
காரப்பா தேயுக்கூறு பயமாங்காரங்
கடுஞ்சோம்பல் நித்திரை மைதுனங்களஞ்சே

- சதகநாடி

Both the external environment and human body is composed of five basic elements called pancha bootha which includes land, air, water, fire and ether. They constitute in definite proportion according to type , land and seasons. Any aberration in the ratio of pancha bootham in nature reflects as natural calamites such as flood, famine, cyclone, and eruption of volcanoes.

“அண்டத்திலுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்
அண்டமும் பிண்டமும் ஒன்று
அறிந்துதான் பார்க்கும் போது”

- சட்டமுனி நிகண்டு

The human body is composed of five base elements called land air, water, fire, and ether. Which maintain the integrity of nature humours called vadha, pitha and kapha in fixed ratio 1:1/2:1/4.

"மிகினும் குறையினும் நோய் செய்யும் நூலோர்
வளிமுதலா எண்ணிய மூன்று”

- திருக்குறள்

Any deviation in this ratio affects the homeostasis of human physiology and leads to pathological condition called pini (or) Noi

The pini or Noi must be cured by " Marunthu" Marunthu means which cure physical, mental illness which possess preventive aspects from diseases and also to postpone death

" நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய் நாடி வாய்ப்பச் செயல் "

- திருக்குறள்

According to Thiruvalluvar the disease must be identified and also then cause for the disease.

The diagnosis is based upon three dhosha theory. To diagnose the disease envagai thervu, or piniyari muraimai is carried out, which is highlighted our Valluvar as

" மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி யுண்ணின்"

- திருக்குறள்.

The treatment is based on principles of Arusuvai, mukkutram and pancha bootha principles. Further paruva kaalam, Astrology, genetic factors are also taken in to account in relation to disease.

Some facts about pathiyam and Anubanam are also considered.

Pathiyam which is peculiar to siddha system of medicine, is a medicinal advise which includes lifestyle modification and dietary modification as per diseased condition.

Anubanam means, it is adjuvant to medicine. It acts as catalyser and enhance rate of absorption of medicine.

Anubanam is different according to type of disease, type of medicine according to season in which treatment is going on,

மூன்றிலொன்று யர்ந்ததை முன்னரறிந்து
முந்தியதனை யொழித்திடு மருந்திடு
தணியும் நோயின் தந்தரமிதுவே
பேணிக் கணித்திடின் பிறவிப் பின்குணம்

Deranged mukkutram (vadha, pitha, kaba) should be controlled first by kalichal (purgation) vamanam (vomiting) and then only the medicine for the disease is to be prescribed.

“உற்றவன் தீர்ப்பான் மருந்துழைச் செல்வானென்
ஒப்பானாற் கூற்றே மருந்து”

- திருக்குறள்

When patient, doctor, pharmacist, and nurse all act in co-ordination the disease will be cured.

AIM AND OBJECTIVES

Aim

Millions of people all over the world are affected by Bronchial Asthma because of pollution in the environment, change in life style and diet.

Mandhara kasam is similar to bronchial asthma . According to siddha system of Medicine " Mandhara Kasam " is a controllable one.

Siddhar's have enumerated lot of medicine for the disease.

The daily increasing number of asthma patients and the efficiency of siddha system of medicine, curing chronic respiratory disease prompted the author to carry out scientific clinical study on the subject.

OBJECTIVE

The prime object of this study is to do a clinical trial on Mandhara kasam affected individuals with selected siddha medicine.

1. Veliparuthi choornam 1gm tds with honey after meals – sarabendarar vaidhya muraigal kasa swasa sikitchai.
2. Thirikadathy kasayam 30 ml bd - Akasthiyar 2000. To made a detailed study of definition, aetiology, clinical feature, diagnosis investigation, treatment and dietics fo Mandhara Kasam in various siddha literatures.
3. To know the extend correlation of Aetiology, signs and symptoms and complications of Mandhara Kasam in siddha aspect is compared with Bronchial Asthma in Modern aspect.
4. To have an idea about the incidence of the disease with regard to age, sex, socio economic status, occupation, family history, food and other habits and paruvakalam and Nilam.

5. To study how the disease Mandhara Kasam alters the normal condition under the headings Mukkutram, pori pulangal, udal kattugal, neerkuri, neikuri, and envagai thervugal especially in naadi nadai.
6. To make a detailed clinical evaluation of the disease by a careful examination on aetiology, signs, and symptoms, complications treatment and prognosis during the course of disease.
7. To utilize the possible modern diagnostics to confirm the diagnosis of the disease.
8. The prime object of the present study is to explore most efficacious medicine for Mandhara Kasam.
9. To evaluate the Bio – chemical and pharmacological analysis and micro biological studies of the trial medicine.

ABSTRACT

Since the number of sufferers increasing day by day, the author has chosen the disease "Mandhara Kasam" for her dissertation work. The increasing incidence of the disease is due to changes in life styles and environment.

Fifteen patients of either sex were selected as In-Patients and twenty Out-Patients were administered with the trial medicine " Veliparuthi Choornam" 1gm three times daily after meals and " Thirikadathy Kasayam" 30ml twice daily after meals during the whole study period.

The trial medicine was subjected to Biochemical and Pharmacological as well as Microbiological analysis.

At the end of the trial study, the majority of the cases showed good results.

REVIEW OF LITERATURE
SIDDHA ASPECTS

The biological function of the body is governed by three distinct humours knowns as **Vadha, Pitha, Kaba**. In a healthy man these three humours are held in the ratio of 1:1/2:1/4 when this equilibrium is altered it leads to disease. When kaba is altered by diet, environment, factors, habits etc., the other two are also altered leading to kaba diseases.

A basic energy which is responsible for a man to be alive is known as Thathu. This one energy is divided into three factors Vadha, Pitha, and Kaba. This one life force in three ways creates, protects and fates in the body.

The human body composed of 72,000 nerves. Among this the ten are big nerves (Thasa Naadi's)

சிறந்தஇடை பிங்கலைஞ் சுழிமுனையி னோடு
சிறப்பான காந்தாரி யத்தீச் சிங்குவையாய
பிறந்த அலம் புருடனொடு குகுதன்றானும்
பேரான சங்குனியும் வயிர வன்றான்
திறந்த விவை பத்துந்தான் றச நாடியாகும்.

- யூகி வைத்திய சிந்தாமணி

Yugimuni says that above ten nerves are "Thasa Naadi's".

"சாருந் தசநாடி தன்னில் மூலம் மூன்று
பேருமிடம் பிங்கலையும் பின்னலுடன் மாறும்
உரைக்கவிரற் காற்றொட்டு ணர்த்து மேநாசி
வரைச் சுழி யோமையத்தில் வந்து
வந்த கலை மூன்றில் வாய்வாமபானனுடன்
தந்த பிராணன் சமானனும் சந்தமுறக்
கூட்டுறவால் ரேசித்தல் கூறும் வாதம் பித்தம்
நாட்டுங் கபமே யாம் நாடு

- கண்ணுச்சாமியம்

According to this three naadies Edakalai, PinKalai, and Suzhumunai are basic naadies and they are called Moolathara Naadi's.

Mukkutram Relation with Elements (Pancha Bootham):-

Vadha = Vali + Ahayam

Pitham = Neruppu

Kabam = Mann + Neer

Among five elements kaba has the qualities of mann and neer. This is explained as follows,

"சேத்துமந் தண்ணீர் பித்தந் தீகாற்று வாதமாமே"

- அகத்தியர் நாடி

Mukkutram Relation with Tastes and Elements:-

Sweet	= Earth + Water
Sour	= Earth + Fire
Salt	= Water + Fire
Bitter	= Air + Sky
Pungent	= Air + Fire
Astringent	= Earth + Air

Vadha	= Air + Sky
Pitha	= Fire
Kaba	= Water + Earth

When vadha, pitha, kaba are in the ratio or 1:1/2:1/4 in the body it indicates that the man is physiologically normal in health according to gunavagadam.

" வழங்கிய வாதம்மாத்திரை யொன்றாகில்
தழங்கிய பித்தந் தன்னிலரை வாசி
அழகுங்கபந் தானடங்கிய காலோடில்
பிறங்கிய சீவர்க்குப் பிச கொன்று மில்லையே

- குணவாகடம்

"வாத பித்த மைய மூன்றும்
வன் பலத்துடனே தத்தம்
பேத மொன்றில்லா வண்ணம்
பேசிய தானந்தன்னில்
நீதியாய் நிலைத்து நிற்கில்
நெடும்பிணி சிக்கவில்லை
தாதுவுமொன்றோடொன்று
தாவிடில் பிணிகள் தானே"

- நோய் நாடல் ,நோய் முதனாடல் திரட்டு

So the alteration of kaba thathu altered the functions of the Ezhu Udar Kattukal and other thathus indicated the disease "Mandhara Kasam".

Mandhara kasam one of the type of kasa noi. The definition aetiology, pathology, clinical features based upon three dhosas, envagai thervugal, prognosis, treatment and preventive method are dealt here.

MANDHARA KASAM

I. VERU PEYARGAL (Synonyms):

KULIR IRUMAL
MANDHARA SWASAM

II. EYAL (Definition):

Mandhara kasam is characterized by running nose, sneeze, tightness of chest, breath sound like hissing of snake, sweating all over the body, cough expectoration and dyspnoea.

III. NOI VARUM VAZHI (Aetiology):

YUGI VAIDHYA CHINTHAMANI Says

"வேகின்ற வதிகமாம் புகையினாலும்
மீறுகின்ற பாணத்தால் மிகுக்குந் தானே" -690
"பாணத்தால் பரமாக்கினி மிகுக்கை யாலும்
பாரமா மிசங்கள் புசிக்கை யாலும்
தாணத்தாற் சஞ்சாரந் தவிர்க்கை யாலும்
சரிபடா பதார்த்தங்கள் புசித்த லாலும்
தீணத்தாற் பொசியாம லிருக்கை யாலும்
சேயிழையார் மேலின்பஞ் சிதைவ தாலும்
மாணத்தால் மாதுக்க மடைத லாலும்
மருந்தாலும் சுவாசமது மருவுங் காணே"

"காணவே தேவதைக்குப் பிரித்த பண்டம்
களவாடி தின்றாலுங் கணவன் றன்னை
தோணவே நிந்தரட்சை சொன்ன தாலும்
சுசியான பதார்த்தமெச்சில் பண்ண னாலும்
வேணவே ஒருவர் செய்த நன்றி தன்னை
மிகமறந்து கொடுமைகடான் விளம்பு வோர்க்கும்
பேணவே சபைதனிலே சொன்ன பேச்சு
பிரண்டோர்க்குங் காசம் வந்து பிறக்குந் தானே" - 692

- ★ Inhalation of excessive smoke.
- ★ Excessive heat.
- ★ Intake of improper diet.
- ★ Intake of different non vegetarian diet.
- ★ Too much of sorrow.
- ★ Worries, immoral habits such as talking lies.
- ★ Spoiling other's food.
- ★ Cursing life partner.
- ★ Forgetting the help rendered by others.

These are all the causes for the disease.

PARA RASA SEKARAM says

"மேவு சிரமதனில் விஷ நீராலே
விண்ணளிடை மந்தார முற்றபோது
வாசமுறுங் குழலார யெண்ணெய் தேய்த்த
வழுவுறுசீ தத்தாலும் பனியினாலும்
ஓசையுறு காற்றாலும் . வேர்வை யாலும்
முண்டாகி மண்டை கனப்புடனே யாகும்
காசமுறு நாலழுங் கபமே பொங்கும்
கருது குண மந்தார காசமாமும்" --- 149

According to pararasa sekaram,
Taking oil bath during the cloudy season, excessive chillness, wind, sweating etc., leads, headache leading to the onset of the disease.

SIDDHA MARUTHUVAM (POTHU)

The disease is due to improper diet and which decreases the vitality and which increase kaba during reduced vital power of the body, husks of paddy, grass, millet, Inhalation of irritant fragrance.

SIDDHAR KAI EZHUTHTHU PIRADHI Says

"கால் பெருக்குணவு தண்ணீர் மாறல்
கருதிருமல் மிகல் வாந்தி குளிர்ந்த காற்று
மால் செய்து நாள்தோறும் வருத்தும் காய்ச்சல்
மந்தன முயில் நிலையில் அடிகள் தாக்கல்
ஏல சீதபேதி விடபாண்டு புகைகள்
இளகிய நெல்லாதி மணிச் சுனையுட் செல்லல்
மேல்வழியில் சிலவரினுமினாப் பாம் நோயு
மேவுமென முனிவர்கள் விளம்பினாரே"

Change of drinking water, when the food causing increase of vadha, frequent cough , cold wind, fever, trauma to the vital organs, dysentery, anemia due to toxicity, inhalation of smoke, husks from paddy other grains are the causes of disease.

IV.MURKURIGAL (Preliminary signs):

SIDDHA MARUTHUVAM (POTHU) Says.

- ★ Soreness of throat
- ★ Redness of throat
- ★ Pricking pain in the throat
- ★ Reduced voice
- ★ Running nose
- ★ Tightness of chest
- ★ Desire to eat hot food

THERAIYAR VAGADAM Says

"வந்திடும் வெள்ளோக்காளம் வாயது தித்திப்பாகும்
நொந்திடும் பிடரி மண்டை மந்தமு மிளைப்பினோங்கும்
முந்தவே தலைதா னொந்து சரீர முகமுங் குத்தும்
சுந்தர தொண்டை நாசி கரகரன்றுடனே தும்மல்"

- ★ Belching(Regurgitation)
- ★ Feeling of sweet taste in tongue
- ★ Loss of appetite
- ★ Occipital pain
- ★ Headache, pain all over the body
- ★ Pain over the face
- ★ Soreness of throat
- ★ Irritation of nose
- ★ Sneeze

V. NOI ENN (Classification):

Mandhara kasam is described as one of the twelve types of Kasam in Yugi Vaidhya Chinthamani.

YUGI VAIDHYA CHINTHAMANI

The twelve types are

1. Mandhara Kasam
2. Pakka Mandhara Kasam

3. Sudar Kasam
4. Vadha Kasam
5. Pitha Kasam
6. Swasa Kasam
7. Ratha Kasam
8. Silethma Kasam
9. Peenisa Kasam
10. Vadha Pitha Kasam
11. Pitha Setpa Kasam
12. Dondha Kasam

ROGA NIRNAYA SARAM

There are five types of Swasa Rogam. They are

1. Oorthuva Swasam
2. Arppa Swasam
3. Vicchina Swasam
4. Maha Swasam
5. Mandhara Swasam

DHANVANTRI VAIDHYAM

Mandhara kasam is classified under Dhonda Kasam. Dhonda Kasam is of five types. They are

1. Mandhara Kasam (Áó¾¡Ã ¸¡°õ)
2. Vega Kasam (§Å¸ ¸¡°õ)
3. Pakka Mandhara Kasam (Àì¸ Áó¾¡Ã ¸¡°õ)
4. Sura Kasam (ÍÃ ¸¡°õ)
5. Vadung Kasam (Å¡Îí ¸¡°õ)

MANDHARA KASAM:

VI. KURI GUNANGAL:

The signs and symptoms are described in many Siddha literatures. They are described as follows.

YUGI VAIDHYA CHINTHAMANI

"தானான தூயதோர் நாசி தன்னில்
சலநோய் நீர் தான் விழுந்த தும்ம லுண்டாம்
மானான மார்புநெஞ் சடைத்து மூச்சு
வலுவான பாம்புபோல் சீற லாகும்
கானான கண்டமோடு முகமுங் காதும்
காயமதுங் கசிவாகி வியர்வை யாகும்
ஏனான இருமலோடு கோழை கம்மல்
இரை ப்பாகு மந்தார காச மாமே"

According to Yugi Vaidhya Chinthamani, the characteristic features of Mandhara Kasam are running nose, sneeze, tightness of chest, breath sound like hissing of snake, sweating all over the body, cough, expectoration, dyspnoea.

AGASTHIYAR -2000

"மந்தார காசமே வந்தால் வாங்கிடும் சுவாசம் மேலா
யித்தார மெய்ச்சுரம் காணுமே இளைத்திடு மிருமல் மெத்த
சந்தாயுடம்பு தலையுடம்பு தளரவலிக்கு மினளப்பாகும்
பந்தாயுடம்பு நெஞ்சமுகம் பத்தி வலிக்கும் பண்பிதே"

The characteristic features of the disease are dyspnoea, fever, frequent cough, emaciation, pain in chest, face. This book also explains about Kaba Mandhara kasam as follows

"துய்யதோர் நாசி தன்னில் தும்மலு மிக வுண்டாகி
நொய்யு நீராய் விழுந்து நோவு பட னீழை வாங்கு
அய்யின் மந்தாரகாசத் தடவிது தானே நீகேள்
செய்யுமா முனிவர் சொன்ன குணமிது தெரிந்து கொள்ளே"

Running nose, sneeze, tightness of chest, dyspnoea and cough with expectoration.

VAIDHYA CHARA SANGRAM

Itching in the face, ear, nose, and sneezing, running nose, cough, pain in the chest and ribs, flatulence, diminished appetite are present in Mandhara Kasam.

UYIR KAKUM SIDDHA MARUTHUVAM @ AATMA RAKSHAMIRTHAM

Á¢¾¡Ã ¸¡°ò¾¢ý þÂøÒ:

முகமும் காதும் ஊறும் நாசிகரகரத்து தும்மல் உண்டாகும், நீர்வடியும் நெஞ்சிற்கபம் கட்டி இருமும்இளைக்கும், நெஞ்சு விலாவும் வலிக்கும், மந்தார காலங்களில் நோய் அதிகப்படும், பசிமந்தம் ஏற்படும், வயிறு பொருமும், உடல் அதைக்கும் கிறுகிறுக்கும்.

ROGA NIRNAYA SARAM

The characteristic features of the disease are Vadha in combination with Kaba affect the nerves and causes ratting sound in throat unbearable difficulty in breathing, increased breathing and increased sputum.

VII. MUKKUTRA VERUPADUGAL (Pathology):

In Siddha system, the manifestation of all the diseases are the result of derangement of Doshas i.e., Vadha, Pitha, Kaba. The prime factor which is involved in Mandhara Kasam is Kaba, which is accompanied with vititated Vadha or Pitaha and produces the clinical symptoms of Mandhara Kasam. This is clearly indicated by Theriyar as

"கபத்தினை யன்றி காசம் சுவாசம் காணாது - தேரையர்"

1. Excess of Kaba in the respiratory organs affect the Melnokkukal and Uyirkal and so the Vayu is not able to reach the terminal point of respiration leads to labored breathing.
2. Some authors say that the disease is caused by deranged Vadha. This may also be acceptable because the obstruction of vayu in the respiratory tract is abnormal.
3. Excessive intake of Vadha promoting diet induces pitha Kutram. This type of Pitha produces more heat and this heat goes to head resulting in running nose, heaviness of head and neck, sneezing, and also induces the excessive mucous secretion of the respiratory passage. which causes narrowing of air passage which leads to the onset of the disease. This is indicated as

”பித்தமே மிகுந்தா லீளை
யிருமலும் பெலத்து நிற்கும்”

- நோய் நாடல் நோய் முதல் நாடல்

So the changes in the diet and habits which increases Vadha and Kaba produce the clinical symptoms of Mandhara Kasam.

In Uyir Nilaigal, Anagatham (chest) which is the residence of Udhanan (Melnokkukal) and Pranan (Uyirkal) is deranged.

When Pranan, the primary Vayu is affected it leads to difficulty in breathing and involvement of Udhanan leads to cough and sneezing. Involvement of Kirugaran leads to running nose, cough, sneezing. Involvement of Devathathan leads of tiredness. Involvement of Samanan cannot control other vayus and causes loss of appetite. Involvement of Sadhagapitha leads to sluggishness. In Kaba , the derangement of Avalambagam leads to dyspnoea, cough , wheezing. In the seven udal Thathus, Saaram and Senneer are affected which leads to lethargy and depression. In severe cases Oon and Kozhuppu are also affected leads to symptoms of emaciation and body pain.

VIII. PINIYARI MURAIMAI (Diagnosis):

Diagnosis is the very important thing for physician by which, he deals the disease by finding its cause and is helpful to undertake a correct line of treatment and also prognosis. The diagnosis is based on

1. Poriyal Arithal
2. Pulalnal Arithal
3. Vinathal
4. En Vagai Thervugal

1. PORIYAL ARITHAL:

Poriyal are the five organs of perception. They are nose, tongue, eyes, skin and ears. Poriyal Arithal is examining the pori of the patient by the pori of the physician. In mandhara kasam, it is as follows

Mei(skin)	:	Sweating all over the body.
Vai (tongue)	:	Dry, pale and sometimes coated.
Kan (eyes)	:	Redness, sometimes dusky and pale.
Mookku (nose)	:	Visible movement of alar nasi, irritation of nose, running nose.
Sevi (ear)	:	Normal.

2. PULANAL ARITHAL:

Pulangal are the five objectes of senses.

Ooru (sensation)	:	Normal or cold due to sweating.
Osai (sound)	:	Normal.
Ozhi (vision)	:	Normal.
Suvai (taste)	:	Diminished or normal.
Natram (smell)	:	Altered or absent due to running nose and inflammation of the nasal mucosa.

3. VINADHAL:

By Vinandhal, the physician knows about the patients name, age, occupation, native place (Thinai), family history, socio -economic status, diet habits, prone to any allergens, (e.g., dust, smoke), his complaints, history of previous episodes, frequency of attacks by changes in season, relevant history of treatment and habits etc.

4. KAALAM (Age distribution):

The period of human life is totally 100 years. This is divided into three stages, according to the domination of three humours as,

1. Vadha Kaalam – 1 to 33 years.
2. Pitha Kaalam – 34 to 66 years.
3. Kaba Kaalam – 67 to 100 years.

Even though in each of this stage, the other humours are also involved, but a particular humour is dominating more. According to this data, the disease Mandhara Kasam come under the type of kaba disease and so more patients are affected in the latter stage (Kaba Kaalam).

5. IVAGAI NILANGAL:

Study of Ivagai Nilangal is very important and useful because there may be possibility of the disease in some areas (e.g., Kurinchi, Mullai, Maruthauam, Neithal, Palai). Ivagai Nilangal are

- Kurinchi – Mountains and its surroundings,
- Mullai – Forests and its surroundings
- Maruthuam – Plains and its surroundings.
- Neithal – Seas and its surroundings.
- Palai – Deserts and its surroundings.

A.Kurunchi

குருஞ்சி வருநிலத்திற்கு கொறற்முண்டி ரத்தம்
உறிஞ்சி வரு சுரமுண்டாம் - அறிஞருரைக்
கையமே தங்குதரத் தாமைவல்லை யுங்கதிக்கும்
ஐயமே தங்கும் அறி

பதார்த்த குண சிந்தாமணி

Persons who are living in Kurunchi Nilam are usually liable for developing Kaba diseases.

B.Mullai:

"முல்லை நிலத்தயமே ரிநிரை மேவினுமவ்
வெல்லை நிலைத்தபித்த மெய்குறுங்காண் - வல்லையெவனின்
வாதமொழி யாதத னுண்மன்று மவை வழிநோய்ப்
பேத மொழி யாதறையப் பின்பு"

பதார்த்த குண சிந்தாமணி.

Though Mullai Nilam is the place of cattles, it is the place of increasing pitha, vadha also joined to that Pitha due to these Kutrams many diseases occur. It is difficult to distinguish between them.

C. Marutham:

"மருதநில் நன்னீர் வளமொன்றைக் கொண்டே
பொருதனில மாதியநோய் போக்கும் - கருதநிலத்
தாறிரதஞ்சூழ அருந்துவரென் றாற்பிணியெல்
லேறிரதஞ் சூழ்புவிக்கு மில்."

பதார்த்த குண சிந்தாமணி.

D.Neithal:

"நெய்தனில மேலுப்பை நீங்கா தூறினுமது
வெய்தனில மேதங்கு வீடாகும் - நெய்தல்
மருங் குடலை மிக்காக்கும் வல்லுறுப்பை வீக்கும்
கருங்குடலைக் கீழிறக்குங் காண்"

பதார்த்த குண சிந்தாமணி.

Though Neithal Nilam has the dominatnt taste of uvarppu (salty), it is the place of Pitha Vayu. The people who dwell here are susceptible to oedema due to Kaba, Silipatha Rogam (Filariasis), Kudalanda Viruthi (Hernia).

E. Palai:

"பாலை நிலம் போற் படரைப் பிறப்பிக்க
மேலைநில மியாது விரித்தற்கு - வேலை நில
முப்பணிக்கு மில்லாம் முறையே யவற்றகலாம்
எப்பிணிக்கு மில்லா ம.ˑ.தெண்."

பதார்த்த குண சிந்தாமணி.

Persons who live in palai are liable to develop the disease of three dhoshas (So Mandhara Kasam is found in these nilam).

6. PARUVA KAALAM (Season):

",¡§Ã Ü¾¢÷ ÓýÀÉ¢ À¢ýÀÉ¢
°£Ã¢Ä §ÅÉ¢ø §ÅÉ¢ø ±ýÈ¡í̀
þÕãýÚ ¾¢È ó¾Ð ¦¾Ã¢¦ÀÕõ ¦À¡Ø§¾"
- °¢ò¾ ÁÕòÐÅ¡í¸î ÍÕì¸õ

With reference to the position of the sun, year is divided into 6 seasons. They are

1. Karkaalam (Avani and Purattasi)
2. Koothirkaalam (iyppasi and Karthigai
3. munpanikaalam (Margazhi and Thai)
4. Pinpanikaalam (Masi and Panguni)
5. Elavenilkaalam (Chittirai and Vaigasi)
6. Mudhuvenilkaalam (Aani and Aadi)

According to literature, Mandhara kasam comes during rainy season (karkaalam). In koothirkaalam, due to kulir katru (cold wind), is also responsible for the disease.

Mandhara kasam mainly occurs due to vitiation of Kaba. Kaba thannilai sirappurum Kaalam – karthigai to masi.

மூவரு மீறி மனிவு கொளாமல்

தத்தம் நிலையில் தன்னரசியலும்
காலவரைதனை கிளரக் கேண்மின்
ஆடியாதியாய் ஐப்பசி ஈராய்
ஆனிலமதற்கோ ரரசியல் காலம்
மீன் முதலானி வீறுகொள் மந்திரி
தேன் முதன் மாசி சேனாபதிக்கே

தேள் - கார்த்திகை

நோய் நாடல் நோய் முதல் நாடல்

Hence the disease can occur in the later part of Koothirkalam to early part Pinpanikalam, i.e., from the last two weeks of October to the first two weeks of February.

Totally the disease's prevalence is from August to February.

7. MUKKUTRA NILAIGAL:

VADHA:

"முறைமையாம் பிராண னோடபானம் வியானன்
மூர்க்கமா மூதானனோடு சமான னாகன்
திறைமையாங் கூர்மனோடு கிருக றன்றன்
தேவதத்த னொடு தனஞ் சயனுமாகும்"

- யூகி சிந்தாமணி 800ல் தத்துவவிதி 35ம் செய்யுள்

PRANAN:

It is responsible for respiration. In Mandhara Kasam, Vayu is affected leading to difficulty of breathing.

ABANAN:

It helps in excretion of urine and motion. In Mandhara Kasam , some patients had constipation.

VIYANAN:

It's main function is distribution of Saaram. In Mandhara Kasam this distribution is affected.

UDANAN

It is present in the chest umbilicus and nose . In mandhara kasam sneezing may be present due to the derangement of this vayu.

SAMANAN:

Samanan is the vayu that controls other vayus and digestion . In Mandhara kasam this vayu is affected since it cannot control the other vayus.

NAGAN:

This Vayu maintains opening and closure of eye lids and is not affected in Mandhara kasam.

KOORMAN:

This vayu is responsible for vision and yawning and is affected in some patients of Mandhara kasam.

KIRUGARAN:

This vayu is responsible for salivation, running nose, sneeze, cough and maintains appetite. In Mandhara Kasam this Vayu is deranged causing running nose, sneeze, cough and loss of appetite.

DEVATHATHAN:

It is responsible for tiredness, anger and emotional expression. In Mandhara Kasam, this vayu is deranged causing emotional stress.

DHANANJEYAN

It produces swelling of the body after death and escapes through the scalp after the third day of death.

PITHA

"ஆக்கனல் வண்ணவெரி யாற்றலங்கி யொள்ளொளித்தீ
நோக்கழலாம் பித்த மைந்த நூதனமா யாக்குமொழி
பாசமி ரஞ்சகஞ் சாதகம் ராசகமா
லோசக மென்றிடுமா லேர்

- மருத்துவ தனிப்பாடல்

According to the Maruthuva Thani padal pitha is divided into five types .

ANAL PITHA :

This lives in the stomach and helps in digestion. In Mandhara Kasam, loss of appetite is present.

RANJAGA PITHA:

It is situated in the Stomach and increases the blood level, it is responsible for the colour of the blood.

SATHAGA PITHA:

It resides in the heart and makes correct activity with the help of mind and brain. In this disease restlessness is present

AALOSAGA PITHA

It resides in both eyes and is responsible for correct vision.

PIRASAGA PITHA :

It resides in skin and gives complexion.

KABA:

"ஆதர வாம் மெய்க்க கவலம் பத மாங்கி
லேதக மாஞ்சுவைப் பேதமூணர்ப் போதகமாம்
தற்பகமாஞ் சந்திகளிற் றங்குஞ் சிலேடகமா
மற்பமிலாச் சேத்தும மைந்து

- மருத்துவ தனிப்பாடல்

Kabam is also classified into Five

AVALAMBAGAM:

It is residing in lungs and helps other four types of Kaba to function, and also helps in the function of heart. It is deranged since the presence of tightness of chest, cough, wheezing dyspnoea.

KILETHAGAM:

It is present in the stomach and gives moisture to the food materials and also helps in digestion. In this disease, some patients have loss of appetite.

POTHAGAM:

Living in the tongue and responsible for taste sensation.

THARPAGAM

Living in the head and provides cooling to the eyes.

SANTHIGAM:

It resides in the joint and helps for free movement. In Mandhara Kasam some patients are affected by arthritis

8. EZHU UDAR KATTUKAL:

"தன்னமாம ரசமிரத்தமா ங்கிசமு மேதை
தசை மச்சையொடு சுக்லந்தா தேழாகி"

- யூகி வைத்திய சிந்தாமணி 800

They are the seven basic principles which constitute the entire body . These are otherwise called us udal Thathukkal . They are

SAARAM:

It is the energy part of end product of digestion . It strengthens the body and mind . It is deranged due to loss of appetite causing tiredness in body and mind.

SENNEER:

It is responsible for knowledge, strength, boldness and healthy complexion. This is deranged here.

OON:

It gives structure to the body and is responsible for the movement of the body.

KOZHUPPU:

When the organs are doing their work, this Thathu gives lubrication and facilitates their work.

ENBU:

It gives the shape to the body and is responsible for protection of the vital organs.

MOOLAI :

It is present in the core of the bone which strengthens and maintains the normal condition of the bone.

SUKKILAM / SURONIHAM:

It is responsible for reproduction. When the seven Udal kattukal increase or decrease from the normal level, the normal functioning of the body is affected.

EN VAGAI THERVUGAL:

It is the basic diagnostic principle and the uniqueness of the Siddha system of medicine . The following verses reveals this as follows.

"நாடி பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திர மிவை மருத்துவராயுதம் "

- நோய் நாடல் நோய் முதல் நாடல் திரட்டு முதல் பாகம்

The diagnostic value of En Vagai Thervugal is specific to Siddha system of Medicine

and presumes the vitiated Doshas in the patient

En Vagai Thervugal are

- ★ Naa
- ★ Niram
- ★ Mozhi
- ★ Vizhi
- ★ Malam
- ★ Moothiram
- ★ Sparisam
- ★ Naadi

A.NAA:

It is noted for it colour, ulcer, growth , coating, colour and consistency of the sputum that is spitted from mouth, mode of speech . In mandhara kasam patients have scanty and mucoid sputum.

B.NIRAM

Colour of the skin , in Mandhara Kasam the colour of the skin is altered.

C.MOZHI:

Mode of speech – anxiety, depressed voice. This includes the sound from lungs due to respiration due to kaba and dyspnoea. In Mandhara Kasam, mode of speech may be emotional, low pitched voice. Wheezing sound is heard.

D.VIZHI:

Type of eye – redness, ulcer, pallor, protrusion, tears, shedddding of eyelashes , excreata of eye, In mandhara kasam, the eyes are red.

E.MALAM:

Consistency – hard or gel or diarrhoea, undigested food, fluid resembles the water used to clean meat , colour frothy, dysentery, blood, pus, mucous, smell frequency of defecation, constipation , reduced or increased stool content, lower

abdominal pain during defecation are noted. In mandhara Kasam, the patients are having constipation

F. NEER @ MOOTHIRAM:

Colour – yellow, red, black, white, copper coloured, mixed colour, colour of fumes. Smell – Smell of fire, honey, sweet odours, fragrance of flower, fruity odour, odour of deer, flesh. Frothy or not , frequency and Quantity are noted. In mandhara kasam it is transparent and frothy.

G.SPARISAM:

Heat or coldness of the body - it may be cold due to sweating in this disease.

H. NAADI :

"நாடி என்றால் நாடியல்ல நரம்பில் தானே
நலமாகத் துடிக்கின்ற துடிதானுமல்ல
நாடி என்றால் வாத பித்தசிலேற்பனமுமல்ல
நாடி எழுபத்தீராயிரந்தானுமல்ல
நாடி என்றால் அண்ட ரெண்டமெல்லாம்
நாடி எழுவகைத் தோற்றத்துள்ளாய் நின்ற
நாடியது யாராய்ந்து பார்த்தாரானால்
நாடியுறும் பொருள் தெரிந்து நாடுவாரே"

\- சதக நாடி

Naadi is the very important helpful observation for diagnosis and prognosis and it indicates the states of uyir thathukkal whether they are normal or abnormal .

The importance of naadi is clearly mentioned by saint Thiruvalluvar by the following verse.

"நோய்நாடி நோய் முதனாடியது தணிக்கும்
வாய்நாடி வாயப்பச் செயல்"

\- திருக்குறள்

In Noi Nadal, noi mudhal Nadal text, naadi is defined as

"உடலில் உயிர் தரித்திருப்பதற்குக் காரணமான சீவசக்தி எதுவோ அதுவே தாது அல்லது நாடி எனப்படும்"

GENESIS OF NAADI

The three Uyir Thathukkal are formed by the combination of three Naadis with three vayus.

Idakali + Abanan = Vatha

Pinghalai + Pranan = Pitha

Suzhumunai + Samanan = Kaba

" சாருந்தச நாடிதன்னில் மூலம் மூன்று
சேருமிடம் பிங்கலையும் பின்னலுடன் மாறு
உரைக்கவிரற் காற்றொட்டுணர்த்துமே நாசி
வரை சுழியோ மையத்தில் வந்து
வந்த கலை மூன்றில் வாயுவாம பானனுடன்
தந்த பிராணன் சமானனுக்குஞ் சந்தமறக்
கூட்டுறவு ரேகித்தல் உறும் வாதம் பித்தம்
நாட்டுங்கபமே யாம் நாடு.

- கண்ணுசாமியம்

This can be felt one inch below the wrist on the radial artery by means of palpation by the three fingers – index, middle and ring fingers corresponding to vadha, pitha and kaba respectively

"கரிமுகனடியை வாழ்த்திக் கைதனில் நாடி பார்க்கில்
பெருவிரலங்குலத்தில் பிடித்தடி நடுவே தொட்டால்
ஒரு விரலோடில் வாதமுயர் நடுவிரற் பித்தம்
திருவிரல் மூன்றிலோடில் சேத்தும நாடி தானே."

- அகத்தியர் நாடி

"வழங்கிய வாதம் மாத்திரை யொன்றாகில்
தழங்கிய பித்தந் தன்னிலரை வாசி
அழகுங்கபந் தானடங்கிய காலோடில்
பிறங்கிய சீவர்க்குப் பிச கொன்று மில்லையே

- குணவாகடம்

NAADI NADAI IN MANDHARA KASAM

When the Naadi rhythm varies from normal to aggravating kaba it causes Mandhara kasam

"கபமல்லாது காச சுவாசம் வராது"

-தேரையர்

"ஐயமே கதித்த போதறிவே பொருமல் காணும்
ஈளையு **மந்தாரகாசம்** நளிர்குளிர் விக்கல் சத்தி
செய்யுமா மூச்சடைப்பான் தீதறு காசரோகம்
தொய்யுமா மிளைப்பு காசம் தோன்று மொன்றரன் சொன்னாரே"

- பதிணென் சித்தர் நாடி

"உற்றிடும் ஐய நாடி ஓங்கியே துடிாத்து நின்றால்
பற்றிடம் மிருமலீளை பதறியே இளைப்புண்டாகும்
மெத்தவே கோழை வாயு மிகுந்திடும்"

- அகத்தியர் குணவாகடம்

Kaba naadi:

"தானமுள்ள சேத்மந் தானிகளகில் வெப்பு
சயமீளை மிருமல் **மந்தாரகாசம்**
ஈனமுறுஞ் சந்தி விடதோடம் விக்கல்
இருத்ரோகங் கரப்பான் விரண தோடம்
மானனையீர் சூலை திரள் வியாதி வீக்கம்
வருஞ் சத்தி சுவாசம் செஞ்சடைப்பு தூக்கம்
ஏனமுறுங் காமாலை பாண்டு சோபை
ஏழு சுரங்கள் பலபிணியுங் காணுந்தானே"

- சதக நாடி

Vatha kabha Naadi :

When the Naadi rhythm varies from normal to vatha kabam, it causes Mandhara kasam

" பாங்கான வாதத்தில் சேத்துமநாடிப்
பரிசித்தால் திமிர்மேவு முளைச்சலாகும்
தீங்கான இருமலுடன் சந்திதோடம்
சேர்ந்த விடம் வெடிசூலை இருத்ரோகம்
வாங்காத ஈளை **மந்தாரகாசம்**
வலியுடனே புறவீச்சு யுள்வீக்கம்
ஓங்கான சுரமுடனே சுவாசகாசம்
உண்டாகும் வெகு நோய்க்கு முறுதிதானே"

- சதக நாடி

Iya ushnam :

When iyam and ushnam are combined then leads to Mandhara Kasam

"கதிப்பான சேத்தமத்தி லுட்டிணங் கூடில்
கலந்த குளிர் சயமிருமல் சுவாசகாசம்
மதிப்பான கோழை ரத்தம் விப்புருதியுடனே
வளர்நாசிகா பீடமிருத்ரோகங்
கொதிப்பான சிங்குவை யாக்கிராண வாயு
கொட்டாவி விக்கல் **மந்தாரகாசம்**
துதிப்பான வீரலத்திக் காய்வுரத்தம்
தோன்றுமிக பிணி பலவுந் தொந்திப்பாமே"

- சத நாடி

Hence the Naadi in mandhara kasam are kaba, Vadha kaba, Pitha kaba, Ilya Vayu, Iya Ushnam.

NEER KURI:

“வந்தநீர் கரியடை மணம்நுரை எஞ்சலென்
றைந்திய ஓளவை யறைகுது முறையோ”

- நோய் நாடல் நோய் முதல் நாடல் திரட்டு முதல் பாகம்

According to this verse, the general, features of urine, Niram, edai, manam, Nurai, and enjal are analyzed.

Niram indicates the colour of the urine voided

Edai indicates the specific gravity of the urine

Manam indicates the smell of the urine voided

Nurai indicates the frothy nature of urine voided

Enjal indicates the quantity (Increased or Decreased)

NEI KURI:

The patient whose urine is to be tested, is asked to take regular and quality diet without any derangement in amount and quality in correct time. The urine is collected the next day in the early morning in a glass vessel. The same type of urine is collected for Neerkuri.

A drop of gingelly oil is dropped on a wide vessel containing the urine to be tested and kept it in the sun light in calm place. The derangement of the three thathus and the disease can be diagnosed by the behavior of gingelly oil on the surface of the urine.

For this examination, urine is collected in the early morning in a pure glass vessel . The patient should be prepared specially for this before the day in a manner of not taking excessive diet in regular timing etc.

"அரந்துமாறிரதமும் அவிரோதமதாய்
அ.˙.கல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றள வருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொரு முகூர்த்தக் கலைக் குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே"

- சித்த மருத்துவாங்க சுருக்கம்

அரவென நீண்டிடின் அ.˙.தே வாதம்
ஆழிபோற் பரவின் அ.˙.தே பித்தம்
முத்தொத்து நிற்கின் மொழிவதென் கபமெ

- நோய் நாடல் நோய் முதல் நாடல்

- Oil spreading like a snake indicates vadha
- Oil spreading like a ring indicates pitha.
- Oil floating like a pearl indicates kaba

In mandhara kasam oil is floating like the pearl in the urine

LINE OF TREATMENT

The line of treatment of mandhara kasam consists of the following:

1. Kalichal maruthuvam - to bring the doshas in equillibrium.
2. Internal Medicine – Mainly anti-spasmodic, expectorant and antihistaminic to relieve the spasm and expel the sputum
3. Diet – To give suitable diet to reduce the kaba
4. Yoga Therapy - to maintain Dhasa vayukal and to improve mental and physical health
5. Preventive methods – By practice of pranayamam

1. KALICHAL MARUTHUVAM (PURGATION):

Patients were given laxative like nilavagai chooranam 5gm with hot water at the bed time on the previous night before taking the treatment.

2. ADMINISTRATION OF INTERNAL MEDICINE:

For the treatment of the disease mandhara kasam, several remedies are suggested in ancient siddha literature. Among these remedies the author selected as follows

Veliparuthi choornam 1gm three times a day with honey after meals.

Thirikadathy kasayam 30ml two times a day after meals

DIET:

Siddhars advice the diet regimen for kaba patients and they are explained below :

Greens are to be added :

வேளை மணத்தக்காளி மெனசீதை சக்கரவர்த்தி
பீளை வசலை சுக்கு பெண்சுணங்கன் - வேளையிலை
செந்தளிர் களைக்கீரை செய்பவர் கபதேகா நிதம்
வந்தளியுணத்தான் மகிழ்ந்து .

- பதார்த்த குண சிந்தாமணி

"காரையிரு கோவை முன்னை செம்பைப் படோல்
துயிலி வழக்கை நெருஞ்சில்
ஆரைபுளி யாரைமுல்லை மருதநெய்தல் மேனி
நல்வல் லாரை பொன்னா
வாரை முசுக் கைமுருங்கை யிருபிண்ணாக்
கோடு பண்ணை மணலி பிள்ளைக்
கீரை முசுட்டை யுங்காரா மணி மாடங்
கடலை புளிக் கிரிக் களாவே"

- பதார்த்த குண சிந்தாமணி

Greens:

சிறு கீரை (Amaranthus gangeticus),

தூது வளை (Solanum trilobatum),

மணத்தக்காளி (Solanum nigrum) ,

முசுமுசுக்கை (Mukia madraspatana) ,

குப்பைமேனி (Acalypha indica),

பறட்டைக்கீரை (Justicia madurensis).

பொன்னாங்காணி(Alternanthera sessilis)

முருங்கை கீரை (Moringa Olefera)

அரைக்கீரை (Ameranthus tristis)

Vegetables to be added

அவரை (Dolicheus lab – lab)

கத்தரி (Solanum melangena),

கண்டங்கத்திரி (Solanum xanthocarpum),

அத்தி (Ficus glomavata),

ஈருள்ளி (Allium cepa) ,

முருங்கை (Moringa olefera),

வாழைக்காய் (Musa paradisiaca),

சுண்டைக்காய் (Solanum tarvum) ,

மாவடு (mangifera indica).

Flowers and stem

வாழைப்பூ (Musa paradisiaca) ,

கருணைத்தண்டு (Amarphophallus poeniifolius).

Tubers:

முள்ளங்கி (Rhaphnus sativus),

வெங்காயம் (Allium cepa),

கூகைக் கிழங்கு (Maranta arundinaceae) ,

இஞ்சி (Zingeber officinale).

Diet Restriction :

Siddhars advised to avoid certain food items during diseased conditions. They are

- ★ Ghee except goat's ghee,
- ★ buttermilk,
- ★ watery vegetables,
- ★ watery fruits,
- ★ cool drinks
- ★ Ice creams
- ★ Chilies
- ★ Sweets

PREVENTIVE MEASURES

The following advices are given to the asthmatic patients.

Asthmatic patients are advised to,

- ★ In take of Hotwater and Hot foods,
- ★ To Avoid chill weather
- ★ To Avoid factors which causes digestive disturbances
- ★ To Avoid Allergic factors
- ★ To Avoid smoking
- ★ Taking bath strictly in Hot water
- ★ Advised to take dinner before 8 pm
- ★ Avoidance of stress
- ★ Avoid working in dust, cement, cotton mills and in husks
- ★ Advised to practice Pranayamam and yogasanam
- ★ Advised to sleep in the phoenix mat

"சிற்றீச்சம்பாயில் படுத்துறங்க உடல் உலரும்
ஆவிருவாதம் ஆதிபித்தம் கபமிகுதி நீங்கும்"

PRANA YAMAM (Breathing Excercise):

" ஏறுதல் பூரகம் ஈரெட்டு வாமத்தால்
ஆறுதல் கும்பகம் அறுபத்து நாலதில்
ஊறுதல் முப்பத் திரண்டதில் ரேசகம்
மாறுதல் ஒன்றின் கண் வஞ்சகமாமே"

\- திருமந்திரம்

According to Thirumandhiram ,Pranayamam or breathing excercise mainly consists of inhalation of air by pooragam (deep inspiration) , kumbagam (holding the breath as far as possible and Resagam (exhalation of air by expiration). The ration is 1:4:2

By this excercise, the duration of Kumbagam is increased. So that results in proper gaseous exchange, which produces increased oxygen supply to the cells particularly to alveoli.

By the regular practice of pranayamam, one can get a feeling of calmness of mind as a result of excess supply of oxygen to the brain cell . This state of mind ultimately helps in good concentration and medication. This practice also gives good appetite, strength, enthusiasm, vigour and vitality.

During breathing excercise, the lungs expand well and get proper supply of oxygen by proper expansion of chest. So pranayama practice is one of the preventive methods for Asthma. This is expressed in the following poem,

"நாளொன்றுக்கு இருபத்தோராயித்து அறுநூறு
நலமான சுவாசந் தானெ ழுந்திருக்கும்
கோ ளொன்றிப் பதினாலாயிரத்து நானூறு
குவிந்த மூலாதரத்துள்ளொடுங்கும்
பாளொன்றி யேழாயிரத்துருநூறு சுவாசம்
பாழினிற் பாய்ந்திடு மென்றறிகப் பின்னை
ஏளொன்றியிதனையெ யுட்சாதித்தால்
எப்பொழுதம் பாலராயிருக்கலாமே"

\- யூகி வைத்திய சிந்தாமணி

YOGA THERAPY

yoga is one of the most spiritual legacies gifted by the ancient sages of India. The practice of asanas strengthens the body and mind and the practitioner can realize it . The following asanas are helpful in Asthma . Puyankasanam, machasanam, mayurasanam, thirikonasanam savasanam, dhanurasanam, arth machasanam.

Asanas strengthen the muscles of respiration and diaphragm as well as regulate respiration . So the practice of asanas is helpful in the ashtmatic patients as supportive therapies.

நோய் கணிப்பு விவாதம்

Swasa Kasam (Ezhuppu Erumal)

வண்மையாய்க் கோழைகட்டி இருமி வீழும்
மாநாகம் போலவே வாங்குஞ் சுவாசம்
திண்மையாச் செருமலுண்டா மடிக் கடிக்குச்
சீரண மிலாலே வயிறு மூதும்
நண்மையாய் நாசியத தணல் போலாகும்
நலிந்துடம்பு வற்றிவருங் குரலுங் கம்மும்
உண்மைாய யுண்ணாக் கிலுாறுங் கேணி
யுழந்துமே சுவாச காசத்தி னொப்பே

- யூகி வைத்திய சிந்தாமணி

In Swasa Kasam, there is cough with expectoration, breathing sound like hissing of snake, hoarseness of voice, indigestion, flatulence, rhinitis, emaciation, brashing etc.

In Mandhara kasam, there is no brashing

Kandakiragam:

வகையான குறலதனைப் பற்றி நொந்து
மார்போடு பிடரியினில் வலியுண்டாகி
நுகரான சரீரமெல்லாம் நொந்த ழாற்றி
நுணுக்கமாய்ச் சுவாசமது புறப் படாமல்
முகையான நாவலே மூச்சு மாறி
முகத்திலே வியர்வாகி விலாநோ வுண்டாம்
பகையான வன்னத்தை பருகொட் டாது
பரியகண்ட கிரகத்தின் பண்பு தானே

In Kandagiragam , there is diffficulty in speech, pain in chest and occipital region, pain all over the body, breathlessness, sweating in face, pain in ribs, loss of appetite etc.

In mandhara kasam, there is no pain in the occipital region.

Silethuma Vadha Suronitham:

பண்பான வுடல்குளரிர்ந்த வயிறு வீங்கி
பதைப்பான விடந் தொட்டாற்போர நோவாந்
திண்பான சிரசுநெற்றி நொக் காடுண்டாம்
சிலேட்டு மமாய்க் கோழையோடு சுவாசமாகும்
மண்பான மயக்க மொட கனவு முண்டாம்
வாய் வறண்ட ருசியில்லா வருத்த மாகும்
நண்பான நாடியுமே படபடக்கும்
நற்சி லேட்ம சுரோணிதமாம் நாடுங் காலே

In Silethuma Vadha Suronitham, there is chillness of body, distention of abdomen, pain while touching the abdomen, headache, expectoration, dyspnoea, fainting , dream, decreased salivation, loss of taste, abnormal pulse etc.

In Mandhara kasam, there is no distention of abdomen and pain while touching the abdomen.

Iya Eraippu Noi:

"திறமையாய் நெஞ்சுதனிற் கோழை கட்டும்
சிக்கொன்று தானிருமி மூக்கடைக்கும்
குறுமையாய்க் குறட்டென்று சுவாசங் காணும்
குளிரோடு சுரமுண்டாய் மயக்க மாகும்
மறமையாய் மார்போட நெஞ்ச டைக்கும்
வாய் வறண்ட மூக்கதனில் நீரோ பாயும்
வெறுமையாய் மிகத்தண்ணீர் தாப முண்டாய்
விடு சுவாச சிலேட்டுமத்தின் விபரந் தானே."

- சித்த மருத்துவம்

In Iya Eraippu Noi, there is congestion in lungs , nasal block, dyspnoea, fever with rigor, syncope , tightness of chest, dryness of mouth, rhinitis, excessive thirst etc.

In Mandhara kasam there is no fever with rigor, excessive thirst etc.,

MODERN ASPECTS
BRONCHIAL ASTHMA

Respiratory system

Respiration is defined as the exchange of gases between body tisue and environment.

Anatomy of The Respiratory System:

The respiratory system is divided into two parts

1. Upper respiratory tract
2. Lower respiratory tract

The dividing line being the lower border of the cricoid cartilage. It is at the level of the lower border of 6^{th} cervical vertebra. The respiratory system is formed by the following organs.

1. Nose
2. Pharynx
3. Larynx
4. Trachea
5. Bronchi
6. Bronchial Tree
7. Lungs
8. Pleura

The upper respiratory tract

The upper respiratory tract made up of nose. Nasopharynx, Pharynx and larynx. It is lined vascular membrane covered ciliated columnar epithelium.

1.NOSE

The nose perfoms two functions. It is a respiratory passage. It is also the organ of smell. The receptors for smell are placed in upper one third of the nasal

cavity . This part is lined by olfactory mucosa. The rest of the nasal cavity is lined by respiratory mucosa.

The nose is divided into two main parts,

a) External Nose
b) Nasal Cavity

a) External Nose:

The external nose has a skeletal frame work that is partly bony and partly cartilagenous. The bones are nasal bones which form the bridge of the nose and the Frontal Process of the maxillae. The cartilages are the superior and inferior nasal cartilages, the septal cartilages and some cartilages.

The prominent ridge separations the right and left halves of the nose is called the dorsum. The upper narrow end of the nose (Just below the forhead) is the root of the nose . The lower end of the dorsum is in the form a somewhat rounded tip . At the lower end of the nose we see the right and left nostrils. The nostrils are separated by a soft median partition called the columnella. This is continues with the nasal septum. Each nostril is bounded laterally by the ala.

b. Nasal Cavity:

The Nasal cavity is the entrance of the respiratory system . It is divided into right and left cavities by the nasal septum.

The root of the nasal cavity is formed by the cribriform plate of ethmoid bone.

The floor of the nasal cavity is formed by the cribriform plate of ethmoid bone.

The floor of the nasal cavity is formed by the palate.

Anterior nasal opening is provided with hair called vivibrissae.

Posterior nasal opening is called choana. It opens into the naso pharynx. The nasal sinuses communicate with nasal cavities by narrow opening and are frequently involved in nasal and nasopharyngeal infection.

Pharynx

Pharynx is a common chamber for the respiratory and digestive system. It located between the mouth and oesophagus. It is about 14 – 15 cm long.

It is situated anterior to the upper 6 cervical vertebrae It is situated posterior to the nose, oral cavity and larynx.

The pharynx has 3 parts

1. naso pharynx
2. Ora pharynx
3. laryngo pharynx

During swallowing respiration is temporarily inhibited and also the elevation of the larynx and closure of vocal cords which prevents the entry of food into larynx.

Larynx

The larynx is called voice box. it is a common chamber for respiration and sound production. It is situated in the anterior part of the neck, in front of the pharynx. It lies between the 3rd cervical vertebra to the 6th cervical vertebra.

It is formed by cartilages and muscles. The cartilages of the larynx are classified into paired and unpaired cartilages.

Paired cartilages are,

a) Arytenoid cartilages
b) Corniculate cartilages
c) cunei form cartilages

Unpaired cartilages are ,

a) Thyroid cartilage – Largest cartilage of Larynx
b) Cricoid cartilage
c) epiglottis

The lower respiratory tract

The lower respiratory tract is made up of trachea, bronchi, broncheal tree, lungs and pleura.

Trachea

The trachea is otherwise called “wind pipe” It is a tubular passage extending down from the larynx. It’s length is about 10 -11cm The trachea has 16 – 20 rings formed by hyaline cartilage.

It commences at the level of the 6^{th} cervical vertibra and terminale at the lower border of the 4^{th} throacic vertebra. It terminates by dividing into right and left bronchi. The trachea is lined by pseudo stratified, coloumnar ciliated epithelium, containing many glob let cells.

Bronchi

The trachea divides into

a) Right Bronchus
b) Left Bronchus

a) Right Bronchus

It is about 2.5cm long

c) It is shorter, wider and vertical than left bronchus

(So foreign bodies easily enter into the right lung through right bronchus). It enters the hilum of the right lung at the level of C_5 .It divides into three lobar bronchi.

b) Left Bronchus

It is about 5 cm long

It is longer than right bronchus

It enter the hilum of the left lung

It lives below the arch of aorta

It divides into two lobar bronchi

BRONCHO PULMONARY SEGMENTS:

The right lung has 10 segments

The left lung has 8 segments

i) Right Lung

Upper lobe:

1. Apical segmental bronchi
2. Anterior Segmental bronchi
3. Posterior segmental bronchi

Middle Lobe:

1. Medial Segmental bronchi
2. Lateral segmental bronchi

Lower Lobe:

1. Apical segmental bronchi
2. Anterior basal segmental bronchi
3. Posterior basal segmental bronchi
4. Medial basal segmental bronchi
5. Lateral basal segmental bronchi

Left Lung:

Upper Lobe:

1. Apical segmental bronchi
2. Anterior segmental bronchi
3. Posterior segmental bronchi
4. lingular segmental bronchi

Lower Lobe:

1. Apical segmental bronchi
2. Anterior basal segmental bronchi
3. Posterior basal segmental bronchi
4. Lateral basal segmental bronchi

Bronchioles

The bronchi further divide into bronchioles. The bronchioles are smaller air passages. The bronchiolar wall has no cartilage. The terminal Bronchiole open into the respiratory bronchioles.

ALVEOLI (Pulmonary Unit)

The respiratory bronchioles divide into alveolar ducts. Alveolar ducts open into air sacs called alveoli. The alveoli width is about 0.3mm

The basic unit of the lung tissue is alveoli . Alveoli are lines by flat epithelial cells. There is a network of capillaries around the alveoli. This arrangement helps in the gaseous exchange

Lungs:

The lungs are essential organs of respiration. There are right and left lungs. The lung situated within the pleural cavity found within the thorax. Before birth the lungs are solid organs and it sinks in water. After birth due to respiration it become porous and spongy and floats in water. In the young the lungs are brown or grey in colour . Gradually they become mottled black because of the deposit of inhaled carbon particles. The weight of the lung is about 650gms in adults.

The lungs are cone shaped and are described as having an apex and a base. Costal surface and medial surface. The apex is rounded and rises in to the root of the neck above 2mm (1inch) above the level of middle third of the clavicle.

The base is concave and semilunar in shape and is closely associated with the thoracic surface of the diaphram.

The costal surface is convex and in closely associated with the costal cartilages, the ribs and the intercostal muscles.

The medial surface is concave and has roughly triangular shaped area, called the hilum at the level of 5”6”7” thoracic vertebrae. Structures that enter and leave at the hilum are 1 bronchus,1 pulmonary artery 2 pulmonary veins 1, bronchial artery 1 bronchial vein., lymph vessels parasympathetic and sympathetic nerves. The area between the lungs is the mediastinum. It is occupied by heart, great vessels, trachea, right and left bronchi oesophagus, lymphnodes, lymph vessels and nerves.

Each lung is surrounded by a double layered membrane called pleura. Not all parts of the plural cavity is occupied by the lung. In costo diapharagmatic recess there is no lung.

The right lung has three lobes

a) Upper lobe
b) Middle lobe
c) Lower lobe

The left lung has two lobes.

a) upper lobe
b) Lower lobe

The left lung is divided by the only oblique fissure which extends from the junction of the fourth or fifth rib with the vertebra column behind to the sixth costo chondral junction in front, crossing the mid axilliary line at the level of the fifth rib. The anterior border of the left lung shows the cardiac notch.

The right lung is divided by the oblique and transverse fissures. The oblique fissure corresponds in position to that on the left lung . The transverse fissure

extends from the middle of the oblique fissure in the mid auxiliary line to the fourth costal cartilage.

The medial surface of each lung shows the hilum. Through the hilum structures enter and leave the lung. The structures passing through the hilum of the lung are bronchus, pulmonary artery and pulmonary vein.

7. PLEURA

The pleura is a closed serous sac . It is the second largest serous membrane of the body. It has two layers namely,

a) parietal layer (outer)
b) Visceral layer (Inner)

Between the two layers the pleural cavity is situated. Thus cavity contains the firm of pleural fluid. The pleural cavity shows enlarged spaces called recesses.

The parietal pleura is supplied by pain carrying intercostal nerves and phrenicnerve. The visceral pleura is supplied by autonomic nerves. Hence Visceral pleura is insensitive to pain

PHYSIOLOGY

Respiration is the process by which oxygen is taken in and carbon di oxide is given out .

The first breath takes place only after birth. Fetal lungs are non functional. So during intra uterine life the exchange of gases between fetal blood occurs through placenta.

After the first breath the respiration is a continous process throughout life. The permanent stoppage of respiration occurs only at death.

Functions of the Lung

Supply of oxygen to the tissue and elimination of carbon-di-oxide from the tissues.

- Regulates acid base balance
- It helps in the maintenance of heart rate and cardiac out put
- It helps in excretion of volatile, substance likes ammonia, water vapour and ketone bodies.
- Mast cells present in the lung secrete substance like histamine, serotonin. 5 hydroxy tryptamine, etc., against allergy.

MECHANISM OF RESPIRATION

Respiration is the exchange of gas between the body and environment, Respiration has two phases

1. Inspiration
2. Expiration

Normal respiratory rate : 16 – 20 per minutes.

Inspiration

The inspiration is the process of entry of air into the lungs

The following changes occur during inspiration

- ★ Chest expands
- ★ The diaphragm move downwards so vertical diameter of the thorax is increased
- ★ Inercostal muscles act on the ribs so the ribs are turned out and elevated . This causes enlargement of the chest cavity

The enlargement of the chest permits the enlargement of lungs

When the lung is enlarged, pressure inside the lung is reduced. This leads to entry of more air into the lungs.

Normally the movements of the chest is equal on both sides. Inspiration is active and expiration is passive. Inspiration is shorter than expiration.

During inspiration there is downward movement of diaphragm and upward and outward movement of chest wall. In childrens the respiratory rate is greater than adult. In old age the rate is decreased.

The following changes occur during expiration

- ★ The diaphragm is relaxed and moves upwards.
- ★ Intercostals muscles are relaxed, so the ribs move inwards
- ★ As a result the capacity of thoracic cavity is reduced the intra pulmonary pressure is increased, and the air is gradually expelled.
- ★ The alternate inflation and deflations of the lungs are due to corresponding changes in the capacity of the thoracic cage brought about by the actions of respiratory muscles.

MUSCLES OF INSPIRATION

- ★ Diaphragm
- ★ External inter costal muscles
- ★ Sterno cleido mastoids
- ★ Elevators of scapula

- ★ Serratus anterior and scalene muscle
- ★ Errectus muscles of the spine

MUSCLES OF EXPIRATION

- ★ Abdominalis
- ★ Internal intercostal muscles
- ★ Posterior inferior serratis

THE GASEOUS EXCHANGE

Gaseous exchange takes place within various parts of the body. It occurs in two stages

1. External Respiration
2. Internal Respiration

1.External Respiration

In external respiration ,gaseous exchange takes place within the lungs. The supply of blood to the tissues depends on the oxygen tension.

Oxygen tension in the alveoli of lungs is 100mm of mercury

Oxygen tension in the blood is 40mm of mercury

Co_2 tension in the blood is 46mm of mercury.

As per the diffusion principle O_2 from greater pressure area diffuses into a low pressure.

So O_2 from the alveoli of the lungs enters into the blood and CO_2 enters from the blood into the alveoli of the lungs. This CO_2 is expelled out during expiration

2. Internal Respiration

In internal respiration, gaseous exchange takes place within the tissue of the body.

In internal respiration oxygen in the blood combines with heamoglobin to form oxyheamoglobin. Which is supplied to the tissues.

The O_2 pressure in the tissues is less than the Co_2 pressure in the tissues. So from the tissues Co_2 diffuses into the blood. As a result the blood containing more Co_2 diffuses into the blood . As a result the blood containing more Co_2 is taken to the lungs for purification.

Respiratory Volumes:

1. Tidal Volume
2. Inspiratory reserve volume
3. Expiratory reserve volume
4. The residual volume

1. Tidal Volume (TV)

Tidal volume is the volume of air passing into the lungs and expelled out of the lungs during quiet, breathing. In quiet breathing about 500ml of air leaves the lungs.

2.Inspiratory Reserve volume (IRV)

It is the additional volume of air that can be taken in by forced expiration. It about 3.3 litres

3. Expiratory Reserve volume (ERV)

It is the volume of air that can be expelled by forced expiration. It is about 1 litre.

4. The Residual Volume (RV)

It is the volume of air which remains in the lungs at the end of forced expiration It is about 1.2 litres

The pulmonary capacities:

1. The Inspiratory capacity
2. Vital capacity
3. Functional residual capacity
4. Total lung capacity

1. The Inspiratory Capacity:

It is the maximum volume of air that can be inspired from end expiratory position. Inspiratory capacity includes tidal volume and Inspiratory reserve volume. I.C = TV + IRV 5.00+3300 = 3800ml

2.Vital Capacity

It is the maximum amount of air that can be expelled forcefully after a maximal (deep) inspiration. Vital capacity includes Inspiratory reserve volume, tidal volume and expiratory reserve volume

VC = IRC + TV + ERV

= 3300 + 500+ 1000 = 4800

3. Functional Residual Capacity

This is the volume of air remaining in the lungs after normal expiration. (after normal tidal expiration) Functional residual capacity includes expiratory reserve volume and residual volume.

FRC = ERC + RV

1000 + 1200 = 2200

4. Total Lung Capacity

Total lung capacity is the amount of air present in the lungs after a maximal (deep) inspiration. This includes all the volumes.

TLC = IRV + TV + ERV + RV

= 3300 + 500+ 1000 + 1200 = 6000ml

Control of Respiration or Regulation of Breathing.

The respiration is regulated in the body for the following purposes

To provide adequate O_2 and to get rid of Co_2 from the body.

O_2 requirement and the amount of Co_2 given out are proportional to the degree of activity of the body. All the other things being equal to the pulmonary ventilatory is directly proportional to the metabolic rate.

The link between metabolism and breathing is probably the variation in Co_2 tension of blood. The level of pulmonary ventilation is sufficient to eliminate Co_2 in appropriate amounts are more than adequate to meet the O_2 requirements.

2. To help to regulate the H^+ concentration of blood

The breathing responds in a extremely sensitive manner to the slightest changes in the H^+ ion concentration of blood and it helps to restore the reaction to its normal level.

Exchange of Respiratory gases in Lungs:

In the lungs exchange of respiratory gases takes place between the alveoli and the blood.

Respiratory unit is the structure through which the exchange of gases between blood and alveoli takes place.

Respiratory unit

The respiratory unit starts from the respiratory bronchioles Each respiratory bronchiole divided into alveolar ducts. Each alveoli duct enters an enlarged structure called the alveolar sac. The space inside the alveolar sac is called antrum. The wall of alveolar sac contains the alveoli. Few alveoli are present in the wall of alveolar duct also.

The respiratory units includes

1. Respiratory bronchioles
2. Alveolar ducts
3. Antrum, Alveolar sacs
4. Alveoli

Each alveolus is like pouch with the diameter of about 0.2 to 0.5mm. It is lined by epithelial cells. The epithelial lining of the alveoli consists of two types of cells called type I alveolar cells and type II alveolar cells. Type I alveolar cells are squamous epithelial cells forming about 95% of the cell. These cells form the site of gas exchange between the alveolus and blood. Type II alveolar cells are cuboidal in nature and form about 5% of alveolar cells. Type II alveolar cells secrete the alveolar fluid and surfactant.

Respiratory Membrane

Respiratory membrane is the membraneous structure, through which the exchange of gases occurs. The blood vessels in the lung form a capillary network beyond the terminal bronchiole in the respiratory unit. The capillaries are formed by endothelial cells. The alveolar membrane and capillary membrane together form the respiratory membrane. The respiratory membrane separates air in the alveoli from the blood in capillaries.

As the capillaries are in close contact with this membrane. The alveolar gases are in close proximity to capillary blood. This facilities the gaseous exchange between air and blood.

DIFFUSING CAPACITY:

The diffusing capacity is defined as the volume of gas that diffuses, through the respiratory membrane. each membrane minute for a pressure gradient of 1mm/hg.

Diffusing capacity for oxygen and $Co_{2.}$

Diffusing capacity for oxygen is 21 ml/minutes/1mmhg. Diffusing capacity for Co_2 is 400ml/minutes/1mm Hg. Thus the diffusing capacity for CO_2 is 20 times more than that of Oxygen.

Diffusion of Oxygen:

From atmosphere to the Alveoli.

The partial pressure of oxygen in the atmosphere is 159mmHg and in the alveoli It is 104 mm Hg. Because of the pressure gradient of 55 mm Hg. Oxygen easily enter the alveoli from atmospheric air.

From alveoli into the Blood:

The partial pressure of O_2 in the pulmonary capillary is 40 mm Hg and in the alveoli it is 104 mm Hg. The pressure gradient from 64 mm Hg. It facilitates the diffusion of O_2 from alveoli into the blood.

In the venous blood the volume of O_2 is 14ml%. The content of oxygen in arterial blood is 19ml%. Thus the diffusion of Oxygen from alveoli to blood is 5ml/100ml of the blood.

Diffusion of Co_2:

From Blood into Alveoli.

The partial pressure of Co_2 in alveoli is 40 mm Hg. where as in the blood it is 45 mm Hg. The pressure gradient of 5 mm Hg is responsible for the diffusion of Co_2 from blood into the alveoli.

The Co_2 content in the venous blood is 52ml % and in arterial blood it is 48ml%. So the diffusion of Co_2 from blood to alveoli in 4ml/100ml of blood.

From the Alveoli into Atmosphere.

In the atmospheric air the partial pressure of Co_2 is very insignificant and is about 0.3 mm Hg. Where as in the alveoli it is 40mm Hg. So Co_2 leaves alveoli easily.

Exchange of gases of tissue:

Diffusion of O_2 from blood in the Tissue:

The partial pressure of O_2 in arterial blood is 95 mm Hg. It is because of admixture of 2 venous blood resulted by 2% of shunt flow from 2% of blood reaches the heart without being oxyginated. The average O_2 tension in the tissue is 40 mm Hg. It is because of continuous metabolic activity and O_2 is constantly utilized. Thus a pressure gradient of about 55 mm Hg exists between blood and the tissue so that O_2 can easily diffuse into the tissue.

The content of O_2 in arterial blood is 19ml% and in the venous blood the volume of O_2 is 14 ml%. Thus the diffusion of O_2 from blood to tissue is 5ml / 100ml of blood.

Diffuse of Co_2 from Tissues into the Blood:

Due to the continuous metabolic activity Co_2 is produced constantly in the cells of the tissues. So the partial pressure of Co_2 is high in the cells and is about 46 mm Hg. The partial pressure of Co_2 in arterial blood is 40 mm Hg. The pressure gradient of 6 mm Hg is responsible for the diffusion of Co_2 from tissues to the blood.

The Co_2 content in arterial blood is 48ml%. And in the venous blood, it is 52ml%. So the diffusion of Co_2 from tissues to the blood is 4 ml / 100ml of blood.

The Respiratory Centre:

The term respiratory centre is used to denote the grey matter in the pons and medulla which is responsible for automatic rhythmic breathing. These neurons do not constitute a compact circumscribed mass and they are not confined to a closely restricted area. These neurons are diffusely distributed throughout the brain stem.

The respiratory neurons are sub-divide into,

1) Inspiratory centre
2) Expiratory centre
3) Pneumotoxic centre
4) Aponeurtic centre
5) Gasping centre

Regulation of Respiration:

Respiration is regulated by

1. Neural Mechanisms
2. Chemical Mechanisms
3. Reflex Mechanisms

Neural Mechanisms:

The respiratory centre is situated in the medulla oblongata of pons.

a Pneumotoxic centre – situated in the pons

b. Inspiratory centre – situated in the reticular formation of the brain stem.

c. Expiratory centre – situated in the reticular formation of the brain stem.

The inspiratory centre is more powerful than expiratory centre. Respiration is automatic and has rhythmic activity.

Efferent impulses are passed from the brain to the diaphragm and intercostal muscles. Afferent impulses are carried from the lungs to the brain via the vagus.

2. Chemical Mechanisms:

In the chemical regulation of respiration if the Co_2 concentration in the blood is increased then the chemoreceptors are stimulated.

The chemoreceptors are carotid body and aortic body.

The carotid body is situated at the terminal end of the common carotid artery. The aortic body is situated on the arch of aorta.

The impulses are carried from the chemoreceptors to the respiratory centres of the brain.

When the inspired air contains more than 4 cc% of carbondioxide it is dangerous. Excess Co_2 interferes with the functions of the Bundle of HIS is situated in the heart, hence heart may fail to function.

5. Reflex Mechanisms: (Hering Breuer reflex)

The lungs contain some stretch receptors. As a result the respiratory centre is inhibited so inspiration stops and expiration begins. During expiration the lungs contract, so inhibitor of respiratory centre stops. As a result inspiration starts again. This reflex is called Hering Breuer's reflex.

Difficiency of Oxygen in the blood stimulate the respiratory centre. When excess Oxygen is present in the blood it depresses respiratory centre.

BRONCHIAL ASTHMA

The signs and symptoms of the disease MANDHARA KASAM is roughly comparable to bronchial asthma. So the explanation about bronchial asthma is given here.

Definition:

Asthma is defined as a disorder characterized by chronic airway inflammation and increased airway hyper responsiveness resulting in symptoms of Wheeze, cough, chest tightness and dyspnoea.

In is characterised functionally by the presence of airflow obstruction which is variable over short periods of time, or is reversible with treatment.

Epidemiology:

The prevalence of Asthma increased steadily over the later part of the last century in countries with a western lifestyle and is also increasing in developing countries. Current estimates suggest that 300 million people world wide suffer from asthma. In childhood asthma is more common in boys , but following puberty females are more frequently affect.

AETIOLOGY AND TYPES OF ASTHMA

The aetiology of asthma is complex and multiple environmental and genetic determinants are implicated

May protect against asthma

- ★ Living on farm
- ★ large families
- ★ Childhood infections including parasites
- ★ Predominance of Lactobacilli in gut of flora
- ★ Exposure to pets in early life

May predispose to asthma

1. Childhood infections
   (eg) respiratory syncytial virus
2. Allergen exposure (eg) house dustmite, household pets indoor pollution
3. Dietary deficiency of antioxidants exposure to pets in early life

The association between atopy – propensity to produce IgE and asthma suggests that sensitisation and exposure to allergens is an important risk factor

Warm humid centrally heated home favour multiplication of house dust mites and this may contribute to childhood asthma . Many patients with asthma appear sensitisted to pets such as cats and dogs

The rapid rise in asthma is incosistant with a genetic explanation however the development of asthma the course of the disease and the response to treatment appear to be under genetic as well as environmental control

From an aetiologic standpoint asthma is a heterogenous disease It is useful for epidemiologic and clinical purposes to classify asthma by the principal stimulas that are associated with acute episodes. However it is important to emphasize that this distinction may often be artificial and the response of a given sub classification usually can be initiated by more than one type of stimulas, with there reservations in mind, one can describe two broad types of asthma

a) Allergic Asthma
b) Idiosyncratic Asthma

a)Allergic Asthma

Allergic asthma is often associated with a personal and family history of allergic diseases such as rhinitis, urticaria and eczema with positive wheal and flare skin reactions to intra dermal injection of extracts of air borne antigens, with increased levels of IgE in the serum, and with a positive response to provocation tests involving the inhalation of specific antigen.

b. Idiosyncratic Asthma

A significant fraction of asthmatic patients presents with no personal or family history of allergy

Negative response to provocation test

Negative skin test.

Normal serum levels of IgE and therefore more disease that cannot be classified on the basis of defined immunologic mechanisms these patients are said to have idiosyncratic asthma

In general asthma that has its onset in early life tends to have a strong allergic component , where as asthma that tend to be non allergic or to have a mixed etiology

GENETIC SUSCEPTIBILITY

Asthma which begins in childhood generally occurs in atopic individuals who produce significant amounts of IgE on exposure to small amounts of common antigens.

First degree relatives of asthmatic patients have a higher prevalance of asthma when compared to relatives of non asthmatic patients.

Several potential gene linkage (eg chromosome 1lg13) to asthma and atopy have been suggested however the genetic contribution to asthma remains poorly defined. It possibly involves polygenic inheritance with several genes contributing to the asthmatic where different combination of genes lead to asthma in different individuals.

ALLERGIES

Allergic is dependent on an IgE response controlled by T and B lymphocytes and activated by the interaction of antigen with mast cell bound IgE molecules.

Most of the allergens that provoke asthma airborne and to induce a state of sensitivity they must be reasonably abundant for considerable periods of time.

Allergic asthma is frequently seasonal and it is most often observed in children and young adults.

A non seasonal form may result from allergy to feather, animal, danders, dust mites, molds and other antigens that are present continuously in the environment.

ENVIRONMENT AND AIR POLLUTION

Indoor

- ★ House dust mites abound in carpets soft furnishings and bedding.
- ★ Pet derived allergens are widespread in houses where dogs or cats are kept .
- ★ Other allegens or relevance are fungal spores and cockroach antigens.
- ★ Pollutants such as nitrogen dioxide are found in higher concentations indoors than outside as a result of gas cookers.
- ★ Sulphur dioxide is released in open fires.
- ★ Passive exposure to cigarette smoke immediately following birth increases the risk of developing asthma.

Outdoor

- ★ Nitrogen di oxide, Ozone, sulphur dioxide and air borne particles exacerbate asthma symptoms.
- ★ The predominent source of nitrogen dioxide comprises motor vehicle emissions and fuel burning industries. Nitrogen dioxide reacts with sunlight and oxygen in a photo chemical reaction to produce ozone.
- ★ Sulphur dioxide is created by the burning of fossil fuels and emissions from diesel powered vehicles.
- ★ Finally, levels of grass and flower pollens very considerably according to the atmospheric conditions, as do allergens from rapeseed, Soya been and other crops.

- ★ Interactions between atmospheric pollutants,
- ★ Aero allergens and climate will have important effects on asthma

OCCUPATIONAL ASTHMA

Many agents encountered in the work place may induce occupational asthma.

Metal salts

- ★ Platinum, chrome and nickel wood and vegetable dusts.
- ★ Those of oak, western red cedar, grain ,flour , castor bean, green coffee bean
- ★ make gum acacia karay gum and tragacanth
- ★ Pharmaceutical agents
- ★ Antibiotics piperizine and cimetidine
- ★ Industiral chemicals and plastics
- ★ Isocyanate, toluene, di-iso-cyanate, phtholic acid anhydride, trimillitic
- ★ anhydride persulfates enthylenadiamine, p-phenyl enediamine and various
- ★ dyes

Biologic enzymes:

- ★ Pancreatic enzymes , Animal and insect dusts serum and secreations

DRUGS:

- ★ Salicylates (eg) aspirin
- ★ Nonsteroidal anti-inflammatory drugs (eg) – indomethacin, ibuprofen , femoprofen, haproxen mefenamic acid phenyl butazone, zompirac sodium
- ★ Beta adrenoreceptor antagonists (β- Blockers) the local use of beta blockers in the eye for treatment of glaucoma is associated with worsening asthma
- ★ Colouring agents such as tartrazine induce asthma
- ★ Sulfiting agents - such as pottassium metabisulfite - potassium and sodium bisulfite, sodium sulfite and sulfur dioxide which are widely used

in the food and pharmaceutical industries as sanitizing and preserving agents also can produce air way obstruction in sensitive individuals

- ★ Exposure usually follows ingestion of food or beverages containing these compounds
- ★ Eg salads fresh fruits potatoes, shellfish and wine.

Infections :

- ★ Respiratory infections are the most common of the stimuli that evoke acute exacerbations of asthma. The most important infectious agents are
- ★ Respiratory syncytial virus.
- ★ Para influenza virus.
- ★ In older children and adults.
- ★ Rhino virus and Influenza viruses are predominate pathogens.

Exercise

- ★ Exercise provokes bronchospasm to some extent in every asthmatic patient.

Psychological factors

- ★ Severe anxiety emotional stress induce the asthma.

CARDINAL PATHOPHYSIOLOGICAL FEATURES OF ASTHMA

- ★ Air flow limitation usually reverses spontaneously or with treatment
- ★ Airway hyper-responsiveness.
- ★ Exaggerated broncho constriction to a wide range of non – specific stimuli (e.g) exercise, cold air.

Airway inflammation

- ★ Eosinophils, lymphocytes, mast cells, neutrophills, associated oedema.
- ★ Smooth muscle hypertrophy and hyperplasia.
- ★ Thickening of basement membrane.
- ★ Mucous plugging and Epithelial damage.

PATHOGENESIS

Chronic Airway inflammation involving many cell types and inflammatory mediation accompanies the bronchial hyper responsiveness asthma . Nevertheless the precise relationship of the inflammatory cells and their mediators to airway hyper reactivity is not fully understood. The mechanistic details have been best studied in allergic asthma. So this will be considered first.

The disease is triggered by environmental antigens such as ducts pollens , animal dander, and foods but potentially may antigen is implicated . A positive family history of atopy is common, and asthmatic attacks are often preceded by allergic rhinitis, uriticaria or eczema. Serum IgE levels are usually elevated . A skin test with the attending antigen results in an immediate wheel and flare reaction a classic example of type I IgE mediated sensitivity elicits an acute immediate response and a late phase reaction.

Recall that exposure of presensintized IgE coated mast cells to the same or a cross reacting antigen stimulates the release of chemical mediators from these cells In the case of airborne the reaction occurs first on sensitized mast cells on the mucosal surface the resultant mediator release opens the mucosal inter cellular tight junctions and enhance penetration of antigen to the more numerous sub mucosal mast cells . In addition, direct stimulation of sub epithelial vegal receptors (parasympathetic) provokes broncho constriction through both central and local reflexes (including those mediated by unmyelinated sensory (c-fibres). This occurs within minutes after stimulation and is called the acute or immediate response. The mediators of IgE triggered reactions include both primary and secondary mediators. The primary mediators include 1. Histamine which causes bronchoconstriction by direct and cholinergic reflex actions increased venular permeability, and increased bronchial secreations and 2. Eosinophilic and neutrophillic chemotactic factors (e.g leukotriene B_4) which selectively attract eosinophils and neutrophils . Histamine is probably important in the first few minutes of an asthmatic attack.

The secondary mediators include 1. leukotrienes C_4, D_4 and E_4 extremely potent mediators that cause prolonged broncho constriction as well as increased vascular permeability and increased mucus secreation 2. Prostaglandins D_2 (PGP_2) which elicits broncho constriction and vaso dilatation 3. Platelet activating factor (PAF) which causes aggregation of platelets and release of histamine and serotonin from their granules and 4. cystokines, such as IL1 tumor necrosis factor (TNF) and IL6 some of which have been found to exist in a performed state within the mast cell granules. The acute reaction is thus associated with bronchoconstriction , oedema, mucus secretion, flushing and , in certain instances hypotension . This is followed by the late phase reaction. Which starts 4 to 8 hours later and may persist for 12-24 hours.

The late phase reaction is mediated in part by a swarm of leukocytes – neutrophils, eosinophils and lymphocytes recrusted by the chemotactic factors and cytokines derived from mast cells during the acute phase response or by other mediators produced by the chronic inflammatory cells already present in asthmatic suffering a recurrent attack . These leukocytes release a second ware of mediators that stimulate the late reaction. Histamine releasing factors, produced by various cell types , induce release of histamine from basophils, cause broncho constriction and oedema. In addition neutrophills cause further inflammatory injury and the major basic protein of Eosinophils cause epithelial damage and airway constriction . The presence of both immediate and delayed reactions in IgE mediated events helps explain the prolonged manifestations of Asthma.

PATHOLOGY

In a patient who has died of acute asthma , the most strinking feature of the lungs at microscopy is their gross over distension and failure to collapse when the pleural cavities are opened. When the lungs are used numerous gelationous plugs of exudates are found in most of the bronchial branches down to the terminal bronchioles.

Histologic examination shows hypertrophy of the bronchial smooth muscle, hyperplasia of mucosal and submucosal vessels, mucosal oedema, denudation of

the surface epithelium pronounced thicknening of the basement membrane and eosinophilic infiltrates in the bronchial wall.

In Asthmatic patients who die from trauma and causes other than asthma itself mucus castes basement membrane thickening, and eosinophilic infiltrates are frequently observed.

In both situations there is an absence of any of the well recognized form of destructive emphysema. In a small proportions of asthamatics who die, the eosinophilic infiltration is replaced by neutrophils and mucus plugging is conspicuously absent.

CLINICAL FEATURES

Asthma is an episodic disease. The symptoms of asthma consist of an tried of dyspnoea, cough and wheezing . At the onset of an attack patients experience a sense of constriction in the chest with non productive cough Respiration becomes audibly harsh, wheezing in both phases of respiration becomes prominent expiration becomes prolonged. Patients have tachypnoea, tachycardia and mild systolic hypertension. The lungs rapidly become over inflated and the anteroposterior diameter of the thorax increases . If the attack is severe or prolonged there may be a loss of advential breath sounds and wheezing become very high pitched . The accessory muscles becomes visibly active and paradoxical pulse develops. These two signs indicates the severity of the obstruction. The development of paradoxical pulse depends on the generation of large negative intra throacic pressure.

Thus if the patients breathing is shallow this sign and or the use of accessory muscles could be absent even though obstruction is quite severe. The other signs and symptoms of asthma only imperfectly reflect the physiologic alterations that are present.

The end of an episodic is marked by a cough that produces thick string mucus, which often takes the form of casts of the distal airways (curshmann's spirals) and when examined microscopically often shows eosinophils and charcot leyden crystals.

In extreme situations , wheezing may listen markedly or even disapper cough may become extremely ineffective , and the patient may begin a gasping type of respiratory pattern. These findings extensive mucus plugging and impending suffocation ventilatory assistance by mechanical means may be required.

Other complications such as spontaneous pneumothorax and pneumo mediastinum are rare

Episodic Asthma

Patients with episodic asthma are usually asymptomatic between exacerbations, which occur during viral respiratory tract infections or after exposure to allergens This pattern of asthma commonly seen in children or young adults who are atopic.

PERSISTENT ASTHMA

Chronic wheeze and breathlessness are present in this type of asthma. This some times make it difficult to distinguish from wheeze due to cold or more unusual causes (e.g.) cardiac failure. This pattern is more common in elder patients with adult onset asthma who are non- atopic and typifies intrinsic asthma. The variable nature of symptoms is a characteristic feature. Typically, there is a diuranal expiratory flow measurement being work in the early morning.

GASTRIC ASTHMA

Worsening of asthma after meals or dyspnoea occurring only after meals is due to gastro – oesophageal reflux (reflux – reflux). This is treated by avoiding oral broncho dilators and instituting anti reflux therapy.

Nocturnal Asthma:

Symptoms such as cough and wheeze often disturb sleep and the term ‘nocturnal asthma’ emphasis this.

Cough Varient Asthma:

Cough may be the dominant symptom and the lack of wheeze or breathlessness may lead to a delay in making the diagnosis of so called “cough varient asthma”.

Exercise – Induced Asthma:

Symptoms may be specifically provoked by exercise, that is called Exercise Induced Asthma.

Acute Severe Asthma:

This term has replaced status asthmaticus as a description of life threatening attacks of asthma.

Patients are usually extremely distressed, using accessary muscles of respiration are hyperinflated and tachypnocil. Respiratory symptoms are accompanied by the tachycardia, pulsus paradoxus (loss of pulse pressure on inspiration due to reduced cardiac return as consequences of severe leper inflammation and sweating.

Immediate Assessment of Acute Asthma:

Features of severity

- ★ Pulse rate > 110 per min
- ★ Pulse paradoxus
- ★ unable to speak in sen tenses
- ★ PEF < 50% of expected

Life – threatening features*:*

- ★ Cannot speak
- ★ central cyanosis
- ★ exhaustion, confusion, reduced conscious level.
- ★ Brady cardia
- ★ Silent chest
- ★ Unrecordable PEF

Arterial blood gases in life – threatening asthma:

A normal (5.6 kpa) or high CO^2 tensio

Severe hypoxaemia (28 kpa)

especially if being treated with oxygen

A low Ph or high (H^+)

Diagnosis and Investigations:

In a account of episodic wheeze, breath less ness interpreted with period of normality is sufficient evidence comes from a history of marked variability attack in small hours of height, Provocation by strong exercise and allergens and paroxysmal cough, productive small amount of sticky sputum.

CONFIRMATON OF THE DIAGNOSIS.

PHYSICAL SIGNS IN THE CHEST

During an attack the chest is held near the position of full and the percussion not may be hyper resonant. Breath sound when not obscured by numerous high pitched polyphonic expiratory and inspiratory rhonchi are vericular in character with prolong expiration. In very severe asthma airflow may be insufficient to produce rhonchi, a 'Silent Chest' in such patient is an ominous sign. There are usually no abnormal physical sign between attacks except in patients with chronic asthma who are seldom without expiratory rhonchi. Severe asthma persisting from childhood may cause a pigeon chest deformity.

RADIOLOGICAL EXAMINATION:-

In an cute attack of asthma the lungs appear hyperinflated. Between episode the chest radiograph is usually normal. In long standing chronic cases the appearance may be indistinguishable from hyper inflation caused by emphysema and a lateral view may demonstrate a "Pigeon Chest" deformity. Occasionally when a large bronchus is obstructed by tenacious mucus, there is an opacity caused by lobar or segmental collapse.

A chest radiograph should be performed in all patients with acute severe asthma. This is especially important if there is poor response to treatment and assited ventilation is being contemplated since pneumothorax is a rate but

potentially fatal complication. The chest radiograph may rarely show mediostinal pericardial or subcutaneous emphysema in patient with acute severe asthma.

Allergic bronchopulmonary aspergillosis may complicate chronic persisting asthma and produce areas of segmental, sub segmental collapse and proximal bronchiectasis.

Pulmonary Function Test:-

Measurement of the FEV (Forced Expiratory Volume) / VC (Vital Capacity) ratio, PEF (Peak Expiratory Flow) provides a fairly reliable indication of the degree of airflow obstruction, and can also be used to determine whether and to what extent it can be relieved by bronchodilator drugs. These parameters are also used to examine whether asthma is provoked by exercise hyperventilation as occupational exposure.

Serial recording of PEF are useful in distinguishing patients with chronic asthma from those with fixed or irreversible airflow obstruction associated with COPD.

In asthma there is usually a marked diuranal variation in PEF the lowest values being recorded in the morning (Morning dipping).

Serial PEF recording are also invaluable in the assessment of patients response to corticosteroid therapy and in the long term monitoring of patients with poorly controlled disease. They are also essential in monitoring response to treatment in acute severe asthma.

Histamine or MethaCholin Bronchial Provocation Test:

Measurement of bronchial reactivity can be of value in diagnosing asthma and in assesing the effects of treatment. This can be achieved by administering increasing concentrations of substances such as histamine and methacholine by inhalation until there is a 20% fall in FEV, or PEF. This concentration is called the PC_{20}. Patients with asthma show evidence of broncho constriction at much lower concentrations than normal subjects.

CHALLENGE TESTING:-

In a patient has a history of occupational asthma “Challenge Testing” a process which involves recording FEV in relation to work is needed. Peak flow meter readings are taken before work at work at certain intervals and after work. The difference may be immediately obvious on looking on the record or particular patients may be noticed.

ARTERIAL BLOOD GAS ANALYSIS:-

Measurements of arterial blood gas pressures (PaO_2 and $PaCO_2$) are indispensable in the management of patients with acute severe asthma.

SKIN HYPERSENSITIVITY TEST:-

A prick is made in the skin with a fine needle through drop of an aqueous extract of the substance to be tested. A positive reaction is indicated by the development of a wheel and flare, which begins to appear within a few minutes. Tests are usually performed with a group of common allergens known to cause bronchial asthma. It is seldom possible with these tests to identify one particular allergen as the cause of asthma in an individual patient and their chief value is to distinguish atopic from non atopic subjects.

SPUTUM EXAMINATION:-

Sputum eosinophilia is a useful indication of an asthmatic type of airways reaction. Stained sections of sputum fixed in alcohol or formalin is probably a sure indication of asthma than a sputum eosinophils count. This is useful for the demonstration of and aspergillus tumigutus, eosinophils are a prominent feature of the inflammatory exudate within the airway luman lies a thick tenacious mucus which under the microscope is seen to contain strips of desquamated epithelial cells (Curschmann’s Spirals) eosinophils isolated metaplastic epithelial cells (Creola – bodies) and crys talline materials consisting largely of major basic protein derived from eosinophils granules (charchot leydon crystals).

An elevated peripheral blood eosinophil count or an increased serum level of total (or) allergen – specific IgE (Radio allergen sorbent Test– RAST) may also be helpful for the diagnosis of bronchial asthma.

COMPLICATIONS:-

Mortality is uncommon in asthma but a severe attack may results in respiratory failure and death. This is more in status “asthmaticus”. Other complications include frequent respiratory infection, pulmonary collapse due to obstruction by viscid secretions. Pneumothorax, emphysema and cough fracture (fracture of 8 ribs due to violent coughing), children with asthma may show retardation of growth especially treated with corticosteroid on long term basis. Long standing bronchial asthma punctuated with frequent respiratory infection may lead to emphysema and chronic cor-pulmanale.

PROGNOSIS:-

The prognosis of the individual attack is good, except in severe acute asthma, where there is occasionally a total outcome especially if treatment is inadequate or delayed. Spontaneous remission is fairly common in episodic asthma particularly in children, but rare in chronic asthma, which can lead to irreversible airflow obstruction. Seasonal fluctuation can occur in both types of asthma. Atopic subject with episodic asthma are usually worse in the summer when they are more heavily exposed to antigens. While chronic asthmatics are usually worse in winter months because of the increased frequency of viral infections.

PREVENTION:-

1. **Avoidance of Allergens:-**

   There are a few instances in which a single agent can be identified as the cause for attack of asthma. These allergens include grass pollens, mites, animal dandier, drugs, industrial chemicals such as isocyanates and articles of diet. The vast majority of patients are hypersensitive to a wide range of allergens and attempts to avoid them all are impractible.

Hypo sensitisation:-

This is the only specific measure available for the prevention of damaging antigen – antibody reaction. It involves the sub-cutenoeus injection of initially very small amount but gradually increasing doses of extracts of allergens, believed to be responsible for the asthma patients hypo sensitisation may be of some value, when only a single allergen is implicated but it is not without the risk of producing an acute anaphylactic reaction. Hypo sensitisation with a mixture is fractional and cannot be recommended.

DIFFERENTIAL DIAGNOSIS:-

The differentiation of asthma from other diseases associated with dyspnoea and wheezing is usually not difficult, particularly if the patient is seen during and acute episode. The physical findings and symptoms and the history of periodic attacks are quiet characteristic. A personal, family history of allergic diseases such as eczema, rhinitis or urticaria is valuable contributory evidence. An extremely common feature of asthma is nocturnal awakening with dyspnoea and wheezing. In fact this phenomenon is so prevalent that its absence raises doubt about the diagnosis.

Upper airway obstruction by tumour (or) laryngeal oedema can occasionally be confused with asthma typically a patient with such a condition will present with stridor, and the harsh respiratory sound can be localized to the area of the trachea diffuse wheezing throughout the lung fields is usually absent. However differentiation can some times be difficult and in direct laryngoscope or bronchoscope may be required.

Asthma like symptoms have been described in patients with glottic dysfunction. These individuals narrow their glottis during inspiration and expiration producing episodic attacks of severe airway obstruction. Occasionally carbon dioxide retention develops. However unlike asthma the arterial oxygen tension is well preserved and the alveolar arterial gradient for oxygen narrows during the episode, instead of widening as with lower airway obstruction. To establish the diagnosis of glottic dysfunction, the glottis should be examined when the patient is

symptomatic. Normal findings of such a time exclude the diagnosis normal findings during asymptomatic periods do not.

Persistant wheezing localized to one area of the chest in association with paroxysm of coughing indicate endobronchial disease such as foreign body aspiration, a neoplasm or bronchial stenosis.

The signs and symptoms of acute left ventricular failure occassonally mimic asthma but the findings of moist basilar rales gallop rhythm blood tinged sputum and other, signs of heart failure allow the appropriate diagnosis to be reached.

Recurrent episodes of bronchospasm can occur with carcinoid tumour recurrent pulmonary emboli and chronic bronchitis.

In chronic bronchitis there are no true symptom – free – periods and one can usually obtain a history of chronic cough and sputum production as a backgrounds upon which acute attacks of wheezing are super imposed.

Recurrent emboli can be very difficult to separate from asthma. Frequently patients with this condition will present with episodes of breathlessness, particularly on exertion and they sometimes wheeze. Pulmonary function studies may show evidence of peripheral airway obstruction when their changes are present, lung scans also may be abnormal the therapeutic response to bronchodilators and to institution of anticoagulant therapy may be helpful, but pulmonary angiography may be necessary to establish the correct diagnosis.

Eosinophilic pneumonias are often associated with asthmatic symptoms as are various chemical, pneumonias and exposures to insecticides and cholinergic drugs.

Bronchospasm occasionally is a manifestation of systemic vasculities with pulmonary involvement.

DIFFERENTIATIONS BETWEEN CARDIAC ASTHMA AND BRONCHIAL ASTHMA

S. No	Factors	Cardiac Asthma	Bronchial Asthma
1	Past history	Hypertension, aortic or coronary disease	Previous attacks of asthma or other allergic conditions in patients or other members of the family
2	Age	Onset usually after 50 years	Any age
3	Precipitating factor	May be precipitated by exertion or acute myocardial infarction factor or hypertension	Trigger functions may be infected non-specific irritants external allergies, exercise or emotional factors.
4	Symptoms a. cough	Cough and dyspnoea, cough associated with watery expectoration which increases intensity towards end of attacks.	Start with dyspnoea expectoration of small sticky sputum paraoxysm of wheeze when cough becomes profuse.
	b. Wheezing	Rare	Usual
	c. Sweating	Prominent	Rare, unless status asthmaticus.
5	Sign: a. Inspection i. accessory muscles of respiration.Shape of the chest	Not Active Normal	Active Emphysematous

	b. Palpation	Heart often enlarged having palpable apex beat	Heart not enlarged, if long standing disease right ventricular enlargement.
	c. Auscultation	S_2 may be loud left ventricular gallop. Expiration not unduly prolonged rales more than rhonchi. Signs in early stage at base lungs gradually ascending up with progress of the attack	Normal A_2 sound, right ventricular gallop is later feature of severe bronchial asthma. Expiration markedly prolonged rhonchi more than rales signs diffuse all over the lungs.
	d. Pulse	Full and Boundring	Feeble and rapid
	e. B.P	Usually elevated	Normal or low
	f. Signs of underlying disease	Hypertension or coronary disease	No evidence of cardio vascular diseases.
	g. Sputum	Hyper tension coronary disease	No evidence of cardio vascular disease
	h. Urine	Generally clear, there may be mild albuminurea	Clear
6	Investigation a. Eosinophil	None	Common

DIFFERENTIATIONS BETWEEN RENAL ASTHMA AND BRONCHIAL ASTHMA

S. No	Factors	Renal Asthma	Bronchial Asthma
1	History	Chronic nephritis	Family history previous attacks of asthma any age often from youth.
2	Age	After 50 years	Any age often from youth
3	Time of onset	Late in night	Early morning
4	Mode of onset	Nothing particular	May be precipitated by allergy

5	Symptoms: a. Cough	Dyspnoea and expectoration	Starts with dyspnoea expectoration or small sticky pellets paroxysm ceases when cough becomes perfuse.
	b. Wheezing	No Wheezing	Usual
	c. Sweating	No sweating	Rare unless status asthmaticus
6	Signs: a. Inspection i. Accessory muscles of respiration	Active	Active
	ii. Shape of the chest	Normal	Emphysematous
	iii. Respiration	Rate of breathing may be faster than normal slightly longer than inspiration.	Respiration is slow arid laboured expiration thrice than inspiration.
	b. Palpation	Normal	Emphysematous
	c. Auscultation i. Chest ii. Heart	Expiration slightly longer than inspiration few rales heard at the base. Left ventricular enlargement	Expiration markedly prolonged, rhonchi more than the rales signs diffuse all over the body. Nothing particular border may not be percussed due to emphysema.
	d. Pulse	Full	Feeble and rapid
	e. B.P	High	Normal or low
	f. Signs of underlying disease	Evidence of cardio vascular disease	No evidence of cardiovascular disease.
	g. Sputum	Scanty	Sticky pellets

	k. Urine	Definite albuminurea and presence of cast clear	Clear
7	Investigation Eosinophillia	No	Present

DIFFERENCES BETWEEN TROPICAL EOSINOPHILIA AND BRONCHIAL ASTHMA

S. No	Factors	Tropical Eosinophilia	Bronchial Asthma
1	Age	Any age	Usually starts before 3 years of age
2	Duration of symptoms	Short duration	Long duration
3	Cough and dyspnoea	Dyspnoea more than cough, breathlessness particularly after cough.	Paroxysmal cough more than dyspnoea
4	Fever	Common	Rare
5	Loss of weight	Fairly common	Seldom
6	Auscultatory signs	Disproportion between cough and breathlessness	Compatible with degree of cough and breathlessness.
7	Blood	Leucocytosis Eosinophilia	Normal WBC count, Eosinophilia 8 to 15%.

DIFFERENTIATIONS BETWEEN BRONCHITIS AND BRONCHIAL ASTHMA

S. No	Factors	Bronchitis	Bronchial Asthma
1	Age	Children less than 5 years and old people	Starts before 3 years of age
2	Duration of Symptoms	Variable	Long duration

3	Fever	Common	Rare
4	Loss of weight	Rare	Seldom
5	Cough and dyspnoea	Complicated by spasmodic dyspnoea prolonged cough is in change of weather more persistent dyspnoea.	Paroxysmal cough more than dyspnoea
6	Signs: b. Inspection i. Accessory muscles of respiration	Active	Active
	ii. Shape of the chest	Barrel shaped	Emphysematous
	iii. Respiration	Expiration is prolonged	Rapid with prolonged Expiration.
	b. Palpation		Movement of the chest wall is symmetrically diminished.
	c. Percussion	Hyper resonance or normal	Normal
	d. Auscultation i. Chest	Vesicular breath sound and prolonged wheezing sounds	Vesicular breath sounds and prolonged wheezing sounds.
	e. Pulse	Normal or low	Feeble and rapid
	f. B.P	Normal or low	Normal or low
	g. Signs of underlying disease	No Evidence of cardio vascular disease	No evidence of cardiovascular disease.
	k. Sputum	Little sticky mucoid in nature	Sticky pellets in nature
	i. Urine	Clear	Clear
7	Investigation Eosinophillia	Common	Common

S. No	Factors	Pulmonary tuberculosis	Bronchial Asthma
1	Age	Generally in aged persons	Usually starts before 3 years of age.
2	History	History of chronic cough	History of previous attacks
3	Duration of symptoms	May last longer	May last up to old age
4	Time of onset		Early onset
5	Mode of onset	May be precipitated by infection	May be precipitated by allergy
6	Loss of weight	Common	Seldom
6	Symptoms: i. Fever	Various extents	Rare
	ii. Cough	Frequent, sharp, short may be dry in the early stages, later it is persistant with copious, purulent expectoration, dyspnoea is late feature.	Paroxysmal cough more than dyspnoea.
	iii. Wheezing	Localized wheezing due to bronchial narrowing by tuberculous lymph nodes.	Wheezing present all over the field.
	iv. Sweating	Expecially during night	Rare, unless in status asthmaticus.
	v. Haemoptysis	Early stage blood stained sputum	Nothing relevant.
8	Inspection	Affected stide of chest flattened with displaced, apex impulse to the side of lesion. Clubbing of fingers present.	No flattening of the chest apical impulse in position.

9	Palpation	Movements of chest in affected side, vocal fremitus diminished (Pleurisy) increased in consolidation. Lymphadenopathy is noted.	In long standing cases right ventricular, enlargement.
10	Percussion	Dull note in the apex other impaired	Normal
11	Auscultation	Breath sounds bronchial, early wheezing, late crackling rales diminished vocal resonance in early and increased in later conditions.	Prolonged expiration, wheezing rhonchi and all over the field.
	a. Pulse	Increased or low	Normal or low
	b. B.P	Low	Normal or low
	c. Sign of underlying disease		No evidence of cardio vascular disease
	d. Sputum	Hard, huck, tenacious sputum positive in culture.	Sticky pellets
	e. Blood	Lymphocytosis raised ESR	Eosinophils, ESR normal.

MATERIALS AND METHODS

Clinical Study:-

The clinical study of “Mandhara Kasam” was carried out during the year 2006 at the Post Graduate Department of Pothu Maruthuvam, Government Siddha Medical College, Palayamkottai. In this study fifteen patients of both sexes were selected in the In-patients Department admitted. In the In-patients ward and were treated with the trial medicine and guided and clearly observed under the supervision of professor and assistant lecturer in the Post graduate Department of Pothu Maruthuvam. After discharge all the fifteen patients were followed as the out patients in the Out - patients department.

The medicine was also subjected to trial with 25 out patients in the out patients department after detailed investigation under the guidance and observation of professor and assistant lecturer.

Selection of the Patients:-

The patients were selected on the basis of the clinical findings of unproductive cough, dyspnoea, tightness of chest, wheezing hardly expectoration of scanty mucoid sputum. Sweating in face and body.

Detailed history of the patients contains past, personal and family histories. Socio economic status, diet, habit, occupational, history, exposure to cold climate, dust, smoke and chemical hazards.

Diagnosis:-

Siddha methods of diagnosis were employed with the following methods Mukkutra nilaigal, En vagai Thervugal, Nilam, Kaalam, Udal Kattugal, Poriyal arithal, Pilanal arithal and vinathal.

Investigation:-

The following laboratory investigations were done in the college hospital for all the patients.

1. Blood test (Sugar, Urea, Cholesterol, TC, DC, ESR, Hb%).
2. Urine analysis (Albumin. Sugar, Deposits).
3. Motion test
4. Sputum for AFB
5. Mantoux test
6. X-ray chest PA view

To establish the efficacy of the trial medicine bio-chemical analysis and Pharmacological studies were conducted in the department of Bio chemistry and pharamacology separately in the Government Siddha Medical College, Palayamkottai and anti-microbial activity was done at Malar Micro Diagnostic Centre, Palayamkottai.

The trial medicine used in the present clinical study is Veliparuthy Choornam (1gm three times daily with honey after meals) and “Thiri Kadathy Kasayam” (30ml twice daily after meals).

All the patients were advised strictly to follow the pathiyam (Dietary Regimen). Pranayamam and mild yogic exercise were also prescribed for the speed recovery of “Mandhara Kasam”.

RESULTS AND OBSERVATIONS

Results were observed with respect to the following criteria.

1. Sex distribution
2. Age distribution
3. Kaalam distribution
4. Dehi
5. Gunam
6. Religion
7. Paruva Kaalam
8. Thinai
9. Occupation
10. Socio-economic status
11. Aetiological factors
12. Mode of onset
13. Clinical features
14. Duration of illness
15. Other system involvement
16. Family History
17. Diet factor
18. Habit
19. Gnanendriyam (Imporigal)
20. Kanmendriyam
21. Kosam
22. Mukkutram
    a. Vatha
    b. Pitha
    c. Kaba
23. Ezhu udal kattukal
24. En vagai Thervugal
25. Neerkuri
26. Neikuri
27. Laboratory Analysis
28. Gradation of results.

For this study 15 In-patients and 25 Out-patients were selected.

1. Sex Distribution:-

Table 1 illustrate the distribution of Sex.

Sl.No	Sex	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Male	6	40%	6	24%
2	Female	9	60%	19	76%

Males are affected in 40% of the In-patients and 24% of Out-patients.

Female are affected in 60% of the In-patients and 76% of Out-patients.

2. Age Distribution:-

Table 1 illustrate the distribution of Age.

Sl.No	Age	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	0 – 20	-	-	2	8%
2	21 – 30	2	13%	7	28%
3	31 – 40	-	-	5	20%
4	41 – 50	3	20%	2	8%
5	51 – 60	3	20%	5	20%
6	61 and above	7	47%	4	16%

In age distribution 47% of In-patients were observed in the age group of 61 and above 20% of the patients were observed in the age group of 51 – 60 years and 20% of the patients were observed in the age group of 41 – 50 years and 13% of the patients were observed in the age group of 21 – 30 years.

Among the Out-patients 28% of the patients were observed in the age group observed, in the age group of 21 – 30 years and 20% of the patients were observed, in the age group of 31 – 40 years and 20% of the patients were observed in the age group of 51 – 60 years and 16% of the patients were observed in the age group of

61 and above and 8% of the patients were observed in the age group of 0 – 20 and 41 – 50 years.

The table showed predominance of distribution in the age group 61 and above years among In-patients and 21 – 30 years among the Out-patients.

3. Kaalam Distribution:-

Table 3: Illustrate the distribution of Kaalam

Sl.No	Kaalam	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Vadha Kaalam (1-33 years)	2	14%	9	36%
2	Pitha Kaalam (34-66 years)	11	73%	13	52%
3	Kaba kaalam (67-100 years)	2	13%	3	12%

Among the In-patients 73% were affected in the Pitha Kaalam. 14% were affected in the Vatha Kaalam and 13% were affected in the Kaba Kaalam.

Among the Out-patients 52% were affected in the Pitha Kaalam, 36% were affected in the Vatha Kaalam and 12% were affected in the Kaba Kaalam.

The table showed the increased incidence of the diseases in the Pitha Kaalam (34 – 66 years).

4. Dehi distribution:-

Table 4: Illustrate the distribution of Dehi.

Sl.No	Dehi	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Vadha Dehi	-	-	-	-
2	Pitha Dehi	-	-	-	-
3	Kaba Dehi	-	-	-	-
4	Dhontha Dehi	15	100%	25	100%

From the table 4, it was observed that all the patients i.e., 100% come under the Dhontha dehi, among both the In-patients and Out-patients.

The table showed the incidence of this disease only in the Dhontha Dehi.

5. Gunam Distribution:-

Table 5: Illustrate the distribution of Gunam

Sl.No	Gunam	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Sathuva gunam	-	-	-	-
2	Rajo gunam	15	100%	25	100%
3	Dhamo gunam	-	-	-	-

100% of both the In-patients and Out-patients fall under the type of Rajo gunam.

This showed the incidence of this disease only in the Rajo gunam persons.

6. Religion Distribution:-

Table 6: Illustrate the distribution of Religion among the patients. .

Sl.No	Religion	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Hindu	14	93%	23	92%
2	Muslim	-	-	-	-
3	Christian	1	7%	2	8%

Among the In-patients 93% were Hindu, 7% were Christian.

Among the Out-patients 92% were Hindu, 8% were Christian.

From the table, it was observed that the increased incidence of this disease was among the Hindu.

7. Paruvakaalam Distribution:-

Table 7: Illustrate the distribution of the disease among the paruvakaalam.

Sl.No	Paruvakaalam	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Kaarkaalam	15	100%	25	100%
2	Koothirkaalam	-	-	-	-
3	Munpanikaalam	-	-	-	-
4	Pinpanikaalam	-	-	-	-
5	Elavenilkaalam	-	-	-	-
6	Mudhuvenil Kaalam	-	-	-	-

Among the In-patients 100% of the incidence of the disease comes under the kaar kaalam.

Among the Out-patients 100% of the incidence falls under the kaar kaalam.

This table showed the prevalence of disease under Kaar Kaalam. Among the both In-patients and Out-patients.

8. Thinai Distribution:-

Table 8: Illustrate the distribution of the disease among thinai.

Sl.No	Thinai	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Kurunichi	-	-	-	-
2	Mullai	-	-	-	-
3	Marutham	15	100%	25	100%
4	Neithal	-	-	-	-
5	Palai	-	-	-	-

Among the inpatients and Out-patients all the 100% belonged to the Marutham.

This table indicated that Marutham was the place of incidence of the disease.

9. Occupation:-

Table 9: Illustrate the distribution of Occupation among the patients.

Sl.No	Occupation	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Agrilabour	4	26%	8	32%
2	Weaver	-	-	-	-
3	Tailor	-	-	1	4%
4	Store keeper	-	-	-	-
5	Watch man	1	7%	1	4%
6	Beedi worker	2	13%	6	24%
7	House wives	6	40%	6	24%
8	Wood cutter	-	1%	1	4%
9	Printing press labour	-	2%	2	8%
10	Sweeper	1	7%	-	-
11	Mill worker	1	7%	-	-

Among the In-patients 40% were house wives, 26% were agri labours, 13% were beedi workers, 7% were sweeper, Mill workers, and watchman. Among the outpatients 32% were agri labour, 24% were beedi worker and House wives, 8% were press workers, 4% were tailor, watch man and wood cutter.

The table indicated increased incidence of the disease in house wives, agri labour and beedi workers.

10. Socio – Economic Status:-

Table 10: Illustrate the Socio – Economic Status of the patients.

Sl.No	Socio – Economic Status	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Rich	-	-	-	-
2	Middle class	-	-	-	-
3	Poor	15	100%	25	100%

The table 10 showed that all the In-patients and Out-patients i.e., 100% were economically poor.

11. Aetiological Factor:- (Allergen)

Table 11: Illustrate the aetiological factor for the disease.

Sl. No	Aetiology	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Dust	-	-	-	-
2	Smoke	-	-	4	16%
3	Husks of grains	-	-	-	
4	Dust and cold exposure	15	100%	16	64%
5	Husks of grains and cold exposure	-	-	5	20%
6	Others	-	-	-	-

Among the In-patients 100% of the patients had dust and cold exposure as their aetiological factor.

Among Out-patients 64% of the patients had dust and cold exposure as their aetiological factor, 20% of the patients husks of grains and cold exposure, 16% had smoke as their aetiological factor.

The above table showed that dust, and cold exposure were the main aetiological factors among the patients.

12. Mode of Onset:-

Table 12: Illustrate the Mode of Onset of the disease.

Sl.No	Mode of Onset	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Sudden	-	-	-	-
2	Gradual	15	100%	25	100%

Table 12 showed that the mode of onset was gradual in all the 100% of the both the In-patients and Out-patients.

13. Clinical Features:-

Table 13: Illustrate the distribution of clinical features.

Sl.No	Clinical Features	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Running Nose	15	100%	25	100%
2	Sneeze	15	100%	25	100%
3	Tightness of chest	15	100%	25	100%
4	Wheeze	15	100%	25	100%
5	Sweating	15	100%	14	56%
6	Cough with expectoration	15	100%	25	100%
7	Fever	-	-	-	-
8	Others.				
	i. Tachy cardia	-	-	6	24%
	ii. Urticaria	-	-	-	-
	iii. Clubbing	-	-	-	-
	iv. Cyanosis	-	-	-	-

Among the In-patients and Out-patients there was 100% incidence of clinical features of running nose, sneeze tightness of chest, wheeze, and cough with expectoration. In, Out-patients 24% incidence of tachy cardia and 56% incidence of sweating.

14. Duration of Illness:-

Table 14: Illustrate the distribution of the Duration of illness.

Sl.No	Illness	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Below 1 year	9	60%	3	12%
2	Below 2 year	-	-	3	12%
3	Below 3 year	-	-	6	24%
4	Below 4 year	-	-	7	28%
5	Above 5 year	6	40%	6	24%

Among the In-patients there was 60% incidence each for the duration of below 1 year and 40% of incidence the duration of above 5 year.

Among the Out-patients 12% incidence each for the duration of below 1 year, 12% incidence each for the duration of below 2 year, 24% incidence for the duration of below 3 year and above 5 year, 28% incidence for the below 4 year.

The table indicated highest incidence of duration of illness among the In-patients was below 1 year and Out-patients was below 4 year and above 5 year.

15. Other system involvement:-

Table 15: Illustrate the distribution of other system involvement.

Sl.No	System	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Cardiovascular system	-	-	-	-
2	Gastrointestinal system	6	40%	5	20%
3	musculoskeletal system	7	47%	-	-
4	central nervous system	-	-	-	-

Among the In-patients 40% of the patients had involvement of gastrointestinal system and 47% of the patients had the involvement of musculoskeletal system.

The Out-patients 20% of the patients had the involvement of gastrointestinal system

The table illustrated that musculoskeletal system was affected more than any other system with this disease both Out-patients and In-patients.

16. Family History:-

Table 16: Illustrate the distribution of the Family History.

Sl.No	Family History	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Positive	-	-	-	-
2	Negative	15	100%	25	100%

The table showed that 100% of the patients had a negative family history.

17. Diet:-

Table 17: Illustrate the distribution of the Diet among the patients.

Sl.No	Diet	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Vegetarian	-	-	-	-
2	Mixed diet	15	100%	25	100%
3	Non vegetarian	-	-	-	-

The table showed that 100% of the patients incidence of the disease for the in and Out-patients with mixed diet.

18. Habits:-

Table 18: Illustrate the distribution of the Habits.

Sl.No	Habits	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Smoker	5	33%	3	12%
2	Tobacco chewer	1	7%	-	-
3	Betalnut chewer	3	20%	9	36%
4	Alcoholic	-	-	-	-
5	No such habits	-	-	13	52%

Among the In-patients 33% of the patients were smoker, 20% of the patients were betalnut chewers, and 7% were tobacco chewer.

Among the Out-patients 36% were betalnut chewer, 12% were smoke 52% of the patients had no such habits.

The table showed the highest incidence of the disease smokers and betalnut and chewer.

19. Imporigal:- (Gnanenthirium)

Table 19 illustrates the distribution of diseases with imporigal.

Sl.No	Imporigal	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Mei	15	100%	23	92%
2	Vai	-	-	-	-
3	Kan	-	-	-	-
4	Mookku	15	100%	25	100%
5	Sevi	1	4%	-	-

Among the In-patients 100% of the patients were affected with both mei and mookku, 4% of patients was affected with sevi.

Among the Out-patients 100% of the patients were affected Mookku, 92% of the patients were affected Mei.

The table showed that mei and mookku were affected in all the patients.

20. Kanmendriyam:-

Table 20 illustrates the distribution of diseases with Kanmendriyam.

Sl. No	Kanmendriyam	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Kai	-	-	-	-
2	Kal	-	-	-	-
3	Vai	-	-	-	-
4	Eruvai	6	40%	5	20%
5	Karuvai	-	-	-	-

Among the In-patients of Eruvai was affected in 40% of the patients Kai, Kal, Vai and Karuvai were not affected.

Among the Out-patients Eruvai was affected 20% of the patients. Kai, Kal, Vai and Karuvai were not affected.

The table showed that Eruvai was affected in most of the cases.

21. Kosam:-

Table 21 illustrates the distribution of Kosam.

Sl. No	Kosam	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Annamaya kosam	15	100%	25	100%
2	Pranamaya kosam	15	100%	25	100%
3	Manomaya kosam	15	100%	25	100%
4	Gnanamaya kosam	15	100%	25	100%
5	Anandhamaya kosam	15	100%	25	100%

In all the In-patients and Out-patients Annamaya kosam, Pranamaya kosam, Manomaya kosam, Gnanamaya kosam and Anandhamaya kosam were affected.

The table showed that all five types of kosam were affected by this disease.

22. Mukkutram:-

a. Vadha:-

Table 22.a Illustrates the distribution of vadha in the disease.

Sl.No	Types of vadha	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Pranan	15	100%	25	100%
2	Abanan	6	40%	5	20%
3	Viyanan	15	100%	25	100%
4	Udhanan	15	100%	25	100%
5	Samanan	15	100%	25	100%
6	Nagan	-	-	-	-
7	Koorman	7	47%	4	27%
8	kirukaran	15	100%	25	100%
9	Devathathan	15	100%	20	80%
10	Dhananjeyan	-	-	-	-

Pranan, Viyanan, Udanan, Samanan, Kirukaran, Devathathan were affected in 100% of In-patients, Abanan was affected in 40% of In-patients, Koorman was affected in 47% of In-patients.

Pranan, Viyanan, Samanan, Kirukaran were affected in 100% of Out-patients, Abanan was affected in 20% of Out-patients, koorman was affected in 27% of Out-patients, Devathathan was affected in 80% of Out-patients.

The table showed that the Pranan, Viyanan, Udanan, Samanan, Kirukaran were affected in completely in this disease.

b. Pitha:-

Table 22.b Illustrates the distribution of Pitha in the disease.

Sl.No	Types of Pitha	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Anal pitha	5	33%	16	64%
2	Ranjaga pitha	6	40%	6	24%
3	Sathaga pitha	15	100%	25	100%
4	Aalosaga pitha	7	47%	4	27%
5	Pirasaga pitha	-	-	-	-

Sathaga pitha was affected in all the 100% of In-patients and Out-patients. Anal pitha was affected in 33% of the In-patients and 64% of the Out-patients, Ranjaga pitha was affected in 40% of the In-patients and 24% of the Out-patients. Aalosaga pitha was affected in 47% of In-patients and 27% of Out-patients.

The table showed so that the Sathaga pitha was affected in all the patients in this disease.

c. Kaba:-

Table 22.c Illustrates the distribution of Kaba in the disease.

Sl.No	Types of Kaba	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Avalambagam	15	100%	25	100%
2	Kilethagam	6	40%	16	64%
3	Pothagam	3	20%	-	-
4	Tharpagam	-	-	5	20%
5	Santhigam	7	47%	10	40%

Among the In-patients, Avalambagam was affected in all the 100% of patients, Kilethagam was affected in 40% of the patients, Santhigam was affected in 47% of the patients and Pothagam was affected in 20% of the patients.

Among the Out-patients Avalambagam was affected in all the 100% of patients, Kilethagam was affected in 64% of the patients and Santhigam was affected in 40% of the patients, Tharpagam was affected in 20% of patients.

The table showed that the Avalambagam was affected in all the patients in this disease.

23. Ezhu Udal Kattugal:-

Table 23 illustrates the distribution of Ezhu Udal Kattugal in the disease.

Sl.No	Ezhu Udal Kattugal	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Saaram	15	100%	25	100%
2	Seneer	6	40%	6	24%
3	Oon	2	13%	-	-
4	Kozhuppu	-	-	-	-
5	Enbu	7	47%	-	-
6	Moolai	-	-	-	-
7	sukkilam / Suronitham	-	-	-	-

Among the In-patients Saaram was affected in all the 100% of patients, Seneer was affected 40% of the patients, Oon was affected in 13% of the patients. Enbu was affected in 47% In-patients and Kozhuppu, Moolai and sukkilam / Suronitam were not affected in the patients of disease.

Among the Out-patients, Saaram was affected in all the 100% of patients. Seneer was affected in 24% of the cases and Oon, Kozhuppu, Enbu, Moolai and Sukkulam / Suronitham were not affected in the patients of disease.

The table showed that Saaram was affected in all the patients and Seneer and Oon were affected in few patients.

24. En Vagai Thervugal:-

Table 24 Illustrates the distribution of En Vagai Thervugal in the disease.

Sl.No	En Vagai Thervugal	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Naa	15	100%	25	100%
2	Niram	-	-	-	-
3	Mozhi	15	100%	25	100%
4	Vizhi	2	14%	5	20%
5	Malam	6	40%	5	20%
6	Moothiram	15	100%	25	100%
7	Sparism	15	100%	25	100%
8	Naadi				
	a. Vadha kaba	6	40%	14	56%
	b. Pitha kaba	4	27%	2	8%
	c. Kaba Vadha	5	33%	7	28%
	d. Kaba pitha	-	-	2	8%

Naa, Mozhi, Moothiram, Sparisam were affecteed in all the 100% of both In-patients and Out-patients. Vizhi was affected in 14% of In-patients, and 20% of Out-patients. Malam was affected in 40% of In-patients and 20% of Out-patients. Patients were affected with vadha kaba naadi 40% of In-patients and 56% of Out-patients, in pitha kaba naadi 27% of In-patients were affected and 2% of Out-patients were affected. In kaba vatha naadi 33% of In-patients were affected and 28% of Out-patients were affected, in kaba pitham 8% of Out-patients were affected.

The table showed that Naa, Mozhi, Moothiram, Sparisam were affected in all the patients of the disease. Vizhi and Malam were affected in few patients.

In naadi vadha, kaba naadi showed higher frequency than pitha kaba naadi.

25. Neerkuri:-

Table 25 Illustrates the distribution of Neerkuri in the disease.

Sl.No	Neerkuri	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Niram	15	100%	25	100%
2	Edai	1	7%	-	-
3	Manam	1	7%	-	-
4	Nurai	15	100%	25	100%
5	Enjal	-	-	-	-

Niram and Nurai were affected in all the 100% of both the In-patients and Out-patients. 7% of the In-patients was affected in Edai and Manam.

26. Neikuri:-

Table 26 Illustrates the distribution of Neikuri in the disease.

Sl. No	Ezhu Udal Kattugal	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Vadha neer	6	40%	14	56%
2	Pitha neer	4	27%	2	8%
3	Kaba neer	5	33%	7	28%
4	Vadha pitha neer	-	-	-	-
5	Vadha kaba neer	-	-	2	8%
6	Pitha vadha neer	-	-	-	-

In Neikuri 40% of In-patients and 56% of Out-patients showed vatha neer. 27% of In-patients and 8% of Out-patients are showed pitha neer 33% of In-patients and 28% of Out-patients showed in kaba neer. 8% of Out-patients showed vatha kaba neer.

The table showed that vadha neer was found in most of the cases.

28.Gradation of Results:-

Table 28 Illustrates the Gradation of Results.

Sl.No	Results	In-patients		Out-patients	
		No of cases	Percentage	No of cases	Percentage
1	Good	6	40%	15	60%
2	Fair	8	53%	9	36%
3	Poor	1	7%	1	4%

Good results were found in 60% of Out-patients and 40% of In-patients. Fair results were found in 36% of Out-patients and 53% of In patients. Poor were found in 4% of Out-patients and 7% of In-patients.

DISCUSSION

Millions of people are affected all over the world by the disease Mandhara kasam, which is similar to Bronchial asthma. The disease occurs due to pollution, changes in the environment and in life style.

Efficacy of siddha system in curing the respiratory disease promopted the author to carry out clinical and scientific study in this subject.

For the clinical study 15 selected patients were admitted as In-patients in the Post Graduate Department of Pothu Maruthuvam and were treated with the trial medicine. After discharge all the 15 patients were followed as the Out-patients.

The trial medicine was also administered to 25 Out-patients in the Out-patients department.

The results were clearly observed and recorded under the supervision of professor, and Assistant Lecturer. The observed results were discussed here.

1. SEX DISTRIBUTION:-

Among the In-patients 60% of the females were affected and 40% of males were affected. Among the Out-patients 76% of the females were affected and 24% of the males were affected.

This indicated that females were mostly affected by the disease than the males.

2. AGE DISTRIBUTION:-

Among the Out-patients 28% of the patients were observed under the age group of 21 – 30 years and 20% of the patients were observed under the age group of 31 – 40 years and 51 – 40 years and 51 – 60 years and 16% of the patients were observed under the age group of 61 and above and 8% of the patients were observed under the age group of 0 – 20 and 41 – 50 years.

Among the In-patients 47% of the patients were observed under the age group of 61 and above, 20% of the patients were observed under the age group of 41 – 50 years and 51 – 60 years and 13% of the patients were observed under the age group of 21 – 30 years.

It show that increased incidence of the patients came for treatment fall under the age group of 61 and above in the In-patients and 21 – 30 years among the Out-patients.

3. KAALAM DISTRIBUTION:-

Among the In-patients, 73% were affected in the pitha kaalam, 14% were affected in the Vadha kaalam and 13% were affected in the kaba kaalam.

Among the Out-patients 52% were affected in the pitha kaalam, 36% were affected in the Vadha kaalam and 12% were affected in the kaba kaalam.

It showed that the increased incidence of the disease was in the pitha kaalam (i.e., 34 – 66 years.).

4. DEHI DISTRIBUTION:-

All the 100% of the patients in both In-patients and Out-patients belonged to dhontha dehi. This showed that the incidence of this disease was only in the dhontha dehi.

5. GUNAM DISTRIBUTION:-

100% of both the In-patients and Out-patients fall under the type of Rajo gunam. This showed that the incidence of this disease in the Rajo gunam persons.

6. RELIGION DISTRIBUTION:-

Among the In-patients 93% were Hindu 7% were Christians.

Among the Out-patients 92% were Hindus and 8% were Christians.

It was observed that the increase incidence of the disease was among the Hindus.

7. PARUVA KAALAM:-

Among the In-patients 100% of the incidence of the disease comes under the kaar kaalam i.e., from Avani to Purattasi.

Among the Out-patients 100% of the incidence falls under the kaar kaalam (i.e.,) from Avani to Purattasi.

According to siddha literature, the prevalence of the disease is from August to February.

According to the above observation the disease occurs from August to October.

8. THINAI DISTRIBUTION:-

Among the In-patients and Out-patients all the 100% belonged to the Marutham (i.e., Field and its Surroundings).

According the Noiella Neri text,

"நீரின் குணமெல்லாம் மண்ணின் குணமல்லால்
மற்றுமுண்டே"

The utilization of land is due to its water source.

நீரின் வழியால் மட்டுமின்றி வெப்பம், காற்று. இவைகளின் வழியாலும் நிலத்தின் பயனை அடையலாம்.

The utilization of land is along with water, heat and air.

As these three were affected in these days due to pollution, the disease occurs in this area also.

The observation indicated that the incidence of the disease is highest in Marutha Nilam (i.e., Field and its Surroundings).

9. OCCUPATION DISTRIBUTION:-

Among the In-patients 40% were house wife, 26% were Agri labour, 13% were beedi workers, 7% were sweaper, mill worker, watch man.

Among the Out-patients 32% Agri labour, 24% were beedi worker and house wife, 8% were press worker, 4% were tailor, watch man and wood cutter.

The observation indicated the increased incidence of the disease in house wives, agri labours and beedi workers.

10. DISTRIBUTION OF SOCIO – ECONOMIC STATUS:-

All the 100% of both the In-patients and Out-patients belonged to the poor.

11. DISTRIBUTION OF AETIOLOGICAL FACTOR:-

Among the In-patients 100% of the patients had dust and cold exposure as their aetiological factor.

Among Out-patients 64% of the patients had dust and cold exposure as their aetiological factor, 20% of the patients husks of grains and cold exposure, 16% had smoke as their aetiological factor.

Above data illustrated dust and cold exposure were the main aetiological factor among the patients.

According to literature the aetiological factors are excessive inhalation of dust, cold climate, smoke, noisy wind husks of grains inhalation of irritant fragrances.

Thus the above data considered with the literature.

12. DISTRIBUTION OF MODE OF ONSET:-

The observation illustrates the mode of onset in all the 100% of both the In-patients and Out-patients were gradual.

13. DISTRIBUTION OF CLINICAL FEATURES:-

The data from the observation showed that 100% of incidence of running nose, sneeze, tightness of chest, wheeze and cough with expectoration in both In-patients and Out-patients.

Sweating was present in 56% of the Out-patients and 24% of the Out-patients tachy cardia was present.

14. DISTRIBUTION OF DURATION OF ILLNESS:-

Among the In-patients there was 60% incidence each for the duration of below 1 year and 40% of incidence of for the duration of above 5 years.

Among the Out-patients 12% incidence each for the duration of below 1 year, 12% incidence each for the duration of below 2 years, 24% incidence for the duration of below 3 years, 28% incidence for the 4 years and 24% incidence of above 5 years.

The data illustrated the highest incidence of duration of illness, among In-patients was below 1 year and Out-patients below 4 year and 5 year.

15. DISTRIBUTION OF OTHER SYSTEM INVOLVEMENT:-

Among the In-patients 40% of the patients had involvement of gastrointestinal system and 47% of the patients had the involvement of musculo skeletal system.

Among the Out-patients 20% of the patients had the involvement of gastrointestinal system.

In both In-patients and Out-patients the musculo skeletal system was affected more than any other system.

16. FAMILY HISTORY:-

Among the In-patients and Out-patients 100% of the patients had negative family history.

This showed that most of the patients had a negative family history.

17. DIET:-

The observation illustrated that among the In-patients and Out-patients had mixed diet.

It indicated that the disease was predominant in the mixed diet habit.

According to yugi vadhya chinthamani. The dietary factor that cause the disease are taking non vegetarian diet and taking improperly cooked food.

Here the observations concede with the Yugi's concept.

18. HABITS:-

Among the In-patients 33% of the patients were smokers 20% of the patients were betal nut chewers, 7% were tobacco chewers.

Among the Out-patients 36% were betel nut chewer, 12% were smoker 52% of the patients had no such habit.

The disease was predominant In-patients of smokers and betal nut chewer.

19. IMPORIGAL (GNANENTHIRIUM):-

Among the In-patients, mei and Mooku was affected in 100% of the patients, Sevi was affected in 4% of the patients.

Among the Out-patients, Mooku was affected in 100% of the patients Mei was affected in 92% of the patients.

It showed that mei and mokku were affected in most of the patients.

20. KANMAENDRIYAM:-

Among the In-patients Eruvai was affected in 40% of the patients Kai, kal and Karuvai were not affected.

Among the Out-patients Eruvai was affected in 20% of the patients. Kai, Kal, Vai, and Karuvai were not affected.

Thus showed that eruvai was affected in most of the cases.

21. KOSAM:

It was illustrated that all the types of Kosam were affected in all the patients of both the Inpatients and Out-patients.

Annamaya kosam is made up of Ezhu Udal Kattukal . Since Saaram was affected in Ezhu Udal kattugal . So annamaya kosam was affected in this disease.

Pranamaya kosam is made up of pranan and Kanmendrium. Since pranan and Eruvai of the Kanmendrium were affected. Pranamaya kosam was affected in this disease.

Manomaya kosam is made up of Manam and Gnanendriyam, since Manam (Mind) Mei and Mookku of Gnanendrium were affected Manomaya kosam was affected in this disease.

Gnanamaya kosam is made up of puthi and Gnanendrium since Mei (skin) and Mookku (Nose) of Gnanendrium were affected. Gnanamaya kosam was affected in this disease.

Anandhamaya kosam is made up of pranan and suluthi. Since pranan was affected, Anandhamaya kosam was affected in this disease

22. MUKKUTRAM

- ★ **Vadha**
- ★ **Pitha**
- ★ **Kaba**

a) Vadha:

Pranan, Viyanan, Udanan, Samanan, Kirukargan, DeVadhathan were affected in 100% of the In-patients and

Abanan was affected in 40% of the In-patient Koorman was affected in 47% fo the In-patients.

Pranan, Viyanan, Samanan Kirukaran were affected in 100% of Out-patients, Abanan was affected in 20% of Out-patients koorman was affected in 27% of Out-patients. DeVadhathan was affected in 80% of Out-patients.

Pranan si responsible for respiration. In Mandhara Kasam, this vayu was affected leading to difficulty in breathing cough and sneeze were also caused by pranan.

Viyanan's main function is distribution of saaram in the body since in Saaram of Ezhu Udal kattukal was affected, so this vayu was affected in this disease.

Udanan is responsible for speech, Manothidam (strength of mind) and Udal vanmai. This vayu was affected in this disease.

Samanan is the vayu that control other vayus and digestion since it cannot control other vayus, it was affected in this disease.

Abanan is responsible for Defeacation and urination. Since patient had constipation this vayu was affected in this disease.

Koorman is responsible for vision 47% In-patients and 20% Out-patients were affected with diminished vision. This vayu and affected in this disease.

Kirukaran is responsible for appetite, sneeze, cough, and running nose. It was affected in this disease.

Devadhathan is responsible for sleep. Since 100% of In – patients and 80% Out-patients were affected by insomnia due to cough in the early morning this vayu was affected in this disease.

22b. Pitha

Sathaga pitha was affected in all the 100% of both In-patients and out-pathents. Anal pitha was affected in 33% of the In-patients and 64% of the outpatients . Ranjaga pitha was affected in 40% of the In-patients and 24% of the Out-patients . Aalosaga pitham was affected in 47% of In-patients and 27% of Out-patients.

Sathaga pitha makes correct activity with the help of mind and brain. Since restleness is present this pitha was affected in this disease.

Anal pitha was responsible for appetite. Since there was loss of appetite, Anal pitha was affected in this disease.

Ranjaga pitha is responsible for colour of the blood (HB%) This vayu is affected in this disease.

Aalosaga pitham is responsible for correct vision . Since 47% of Inpatient and 27 % of Out-patients were affected by diminished vision this pitha was affected.

22c KABA:

Among the In–patients Avalambagam was affected in all the 100% of patients kilethagam was affected in 40% of the patients santhigam was affected in 47% of the patients and pothagam was affected in 20% of the patients.

Among the Out-patients Avalambagam was affected in all the 100% of patients Kilethangam was affected in 64% of the patients and santhigam was affected in 40% of the patients. Tharpagam was affected in 20% of patients.

Avalambagam is residing in lungs and helps other four types of kaba to function. It was deranged due to the presence of tightness of chest, cough, wheezing, and dyspnoea.

Kilethagam helps in digestion since the patients were affected by indigestion this kaba was affected.

Pothagam is residing in the tongue and is responsible for taste sensation. Since there was loss of appetite this kaba was affected.

Tharpagam provides cooling of the eyes. Since there was reddishness (due to conjunctivitis) in this disease it was affected.

Santhigam resides in the joints and helps for movements. Since 47% of Inpatients and 40% of Out–patients were affected by joint pain it was affected.

23. EZHU UDAL KATTUKAL

In Ezhu Udal Kattukal, saaram was affected in all the 100% of both In–patients and out-patients. Seneer was affected in 40% of In–patients and 24% of out-patient. Oon was affected in 13% of In -patients Enbu was affected in 47% of In – patients.

Kozhuppu, Moolai, Sukkilam/Suronitham were not affected in all the patients.

Saaram strengthens the body and mind. Since there is derangement and loss of appetite causing body tiredness.

Seneer is responsible for knowledge strength boldness and healthy complexion. Since there was reduction in strength of body and mind, it was affected in this disease.

Enbu was affected due to the joint pain.

OOn was affected because of the poor nourished.

24. ENVAGI THERVUGAL

Naa, Mozhi, Moothiram and Sparisam were affected in all the 100% of both the In–patients and Out-patients Vizhi, were affected in 14% of In–patients and 20% of out -patients Malam was affected in 14% of In In–patients and 20% of Out-patients Malam was affected in 40% of In-patients and 20% of out patients due to constipation.

In Naadi, 40% of In-patients and 56% of Out-patients were affected with Vadha kaba naadi 27% of In-patients and 8% of Out-patients were affected in Pitha kaba Naadi 33% of In-patients and 28% of Out-patients were affected in Kaba Vadha naadi 8% of Out-patients were affected in Kaba pitham Naadi.

25. NEERKURI

100% of In-patients and outpatients were affected in Niram and Nurai 7% of In-patients were affected in Edai and Manam . It was due to their vitated Kaba and Diabetic Mellitus.

26. NEIKURI

Neikuri illustrated that among the In-patients 40% had vadha Neer, 27% had pitha neer, 33% had kaba Neer

Among the Out-patients 56% had Vadha Neer, 8% had pitha Neer, 28% had kaba neer, 8 % had vadha kaba neer.

This showed that vadha Neer was found in Most of the cases.

27. LABORATORY INVESTIGATIONS

Routine investigation of blood and urine were done during the admissions and at the end of the treatment for every case.

Blood sugar, Urea and Serum cholesterol were found to be in normal range in 14 In-patients and 25 out-patients. 1 In-patient had increased Blood Sugar and after treatment it was reduced.

X-Ray Chest PA view showed normal 88% of the cases and 12% of the cases showed bronchitis in outpatients.

In the In - patients X Ray chest PA view showed 86% normal and 14 % Bronchitis.

Urine examination showed nil albumin and sugar in Out-patients but 8% of patients had epicells in the urine Deposits and 20% patients had pus cells in urine after treatment it was nothing abnormal detectable.

Urine examination showed Nil Albumin in 100% of In–patients and 7% of In - patient had urine sugar(++) and after treatment it was urine sugar was (+).

7% of the In-patients had pus cells and after treatment it was nothing abnormal detectable.

Blood investigation of In-patients showed Total count of WBC within the normal range Eosinophils count was increased and ranged from 4% to 15% cells before treatment and after treatment it ranged between 2% to 6% ESR was raised and reduced after treatment.

In few patients Hb% was decreased it was raised after treatment.

Blood investigation of outpatients showed TC within the normal range. Eosinophils count was raised and showed the range 4% to 16% cells before treatment, and after treatment it ranged between 2% and 6% ESR was raised

before treatment and reduced after treatment in few patients Hb% was decreased it was increased after treatment.

Blood investigation of out-patients showed TC within the normal range eosinophils count was raised and showed the range 4% to 16% cells before treatment, and after treatment it ranged between 2% and 6% ESR was reduced after treatment are in few patients Hb% was decreased it was increased after treatment.

Motion test showed no abnormalities in all the 100% of the In–patients and Out-patients.

Suptum for AFB examination was found to be negative for all the 100% of both the In-patients and Out-patients.

Mantourx test was found to be negative for the 100% both the In – patients and Out-patients.

28. MODERN MEDICINE : COMPARISON

According to Modern medicine the aetiological factors for the disease are exposure to cold climate and dust , smoke, pollen grains and food habits.

In our literature yugi said more or less the same reasons for the disease.

The signs and symptoms of the disease Bronchial Asthma are closely matched with Mandhara Kasam as explained by Yugi muni.

29. TREATMENT

On the first day of treatment laxative , Nilavagai Chooranum 5 gm with hot water was given the bed time before starting the internal medicine.

On the second day the trial medicine veliparuthi choornam, 1 gm three times daily with honey after meals and Thirikadathy kasayam 30ml twice after meals was prescribed and was given till the end of the clinical trial.

30.DIET REGIMEN

Patients were advised to avoid watery fruits and vegetables matured brinjal, pagal, dried fish, cold water and cold food.

Patients were recommended to take vegetables such as avarai, greens, kandakathiri, murungai , onion , ginger and sundai.

31.PRANAYAMAM

Patients were advised to do pranayamam breathing excercise 20 counts twice daily for better results.

32.YOGA THERAPY

Yogasanas such as Savasanam, Puyangasanam, Matchasanam were advised to be practiced for quick relief.

Clinically no side effects and adverse effects were noted for the maximum 35 days of therapy

33. GRADATION OF RESULTS

Good results were found in 60% of out patients and 40% of In - patients . Fair results were found in 36% of outpatients and 53% of In - Patients poor results were found in 4% of out patients and 7 % of In – patients.

Bio chemical analysis showed the presence of sulphate, ferrous iron, unsaturated compound, Reducing sugar and amino acid in the trial medicine Veliparuthi choornam.

Bio chemical analysis show the presence of sulphate, chloride, ferrous Iron, Tannic acid unsaturated compounds, reducing sugar and Amino acids in the trial medicine of Thirikadathy kasayam.

Pharmacological analysis revealed that the trial medicine veliparuthi choornam had good antispasmodic and antihistamine activities.

Pharmacological analysis revealed that the trial medicine Thirikadathy kasayam had moderate antisparmodic and antihistamine activities.

Antimicrobial study showed the Trial medicines were well susceptible to the staphylococcus aureous .

SUMMARY

Mandhara kasam is the common respiratory disease seen in day to day clinical practice.

Sincerity, charity and skill are the basis of practice of medicine. Further loving tender care is essential for winning co-operation and confidence of the patients for the ultimate recovery.

Economy is more important in the rising cost of living. “Veliparuthy Choornam” and “Thiri kadathy Kasayam” was easily preparable low economic and purely herbal the author had selected as the trial medicine.

The aetiology, pathology, classification, clinical features, diagnosis, complication, prognosis, treatment and preventive measures were collected from the siddha and modern system of medicine.

In this study, 25 patients of both sexes of varying age groups were selected as Out-patients and 15 patients as In-patients.

From the observation and results we were clear that the disease was common in the follow aspects.

Females were mostly affected than males. Age incidence has commonly found in all decades increased incidence during their occupational period.

All the patients had Dhontha Dehi, Rajogunam and Poor socio economic status.

Hindus were mostly affected majority of the cases were affected in Kar kaalam (August and September) most of the patients belonged to the Thinai Marutham.

In the occupation agricultural labours and beedi workers were mostly affected.

Aetiological factor were mostly dust and cold exposure.

All the patients had gradual onset of the disease.

All the patients were affected with clinical features of Sneeze, Running nose, Tightness of chest, Wheeze, Sweating, Cough with scanty mucoid expectoration.

Duration of illness ranged from 1 year to 5 year and above.

Muskulo skeletal system was mostly affected with this disease.

100% In-patients and Out-patients had negative family history.

In imporigal mei and mookku were affected in most of In-patients and Out-patients.

In kanmendriyam eruvai was mostly affected.

All the five types of kosam were affected in all the 100% of both the In-patients and Out-patients.

In mukkutram

In vadha: Prananan, Saanan. Viyanan, Udhanan, Samanan, Kirukaran, Devathathan were affected in all the 100% of the both In-patients and Out-patients.

- Abanan was affected in many cases.

In Pitha: Sathaga pitha was affected in all the 100% of the cases of both In-patients and Out-patients.

- Anal pitha was affected in few patients.
- Ranjaga pitha was affected in few patients.
- Aalosaga pitha was affected in few patients.

In Kaba: Avalambagam was affected in all the cases kilethagam was affected in few patients.

- Santhigam was affected in few patients.
- In Ezhu Udal Kattugal saaram was affected in all the cases seneer was affected in few patients and Oon, Enbu was affected in few cases.

En Vagai Thervugal:-

- Nar, Mozhi, Moothiram and Sparisam were affected in all the 100% of the In-patients.
- Vizhi, Malam were affected in few patients.
- Neer kuri showed transparent and frothy urine.
- Neikuri showed derangement of mukkutram, vadha neer was found in most of the cases.
-

Laboratory investigation showed normal blood sugar, urea, cholesterol decreased Hb%, normal TC count raised eosinophil count and ESR decreased Hb% were increased after treatment raised eosinophil count and ESR were reduced after treatment. 7% of In-patients were increased blood sugar and after treatment decrease the blood sugar.

Urine analysis showed pus cells and epithelial cells in few cases and it was Nothing Abnormal Detectable after treatment.

Sputum analysis showed negative AFB and Mantoux test was negative in all the patients.

X-ray chest PA view was normal in most of the cases.

The efficacy of the trial medicine Veliparuthi Choornam and Thirikadathy Kasayam was studied and observed during the dissertation period.

All the patients were advised to follow strict diet restricting and advised to practice pranayamam and yoga therapy for fast relief.

Clinically good results showed 40% of the In patients and 60% of the out patients.

No side effects and adverse effects were noticed during the period of study.

Biochemical analysis showed the presence of sulphate, chloride, ferrous iron, tannic acid, unsaturated compounds. Reducing sugar and amino acid in the trial medicine Thirikadathy kasayam and sulphate, ferrous iron, unsaturated compound, reducing sugar and amino acid in the trial medicine Veliparuthi Choornam.

Pharmacological analysis showed that trial medicines had significant antispasmodic and antihistamine activities.

Anti microbial studies showed that the Medicines. Veliparuthi Choornam and Thirikadathy Kasayam were susceptible to the staphylococcus aureous.

CONCLUSION

The common belief of the public that the siddha medicines and diet prescribed are more effective in the treatment of “Mandhara Kasam” is once again established by this clinical study. The cost of the medicines used in the treatment of Mandhara Kasam is low when compared with modern medicine. These medicines can be easily prepared.

And above all the side and untoward effects of these medicines i.e., Veliparuthi Choornam and Thirikadathy Kasayam are nil. And the Bronchodilator and Anti histamine actions of these medicines are proved in the rabbit and guinea pig by pharmacological studies. These medicines are effective in the treatment of Mandhara kasam is also proved by the clinical study and can be much benefited.

PREPARATION OF THE TRIAL MEDICINE

I.VELIPARUTHI CHOORNAM

(வேலிப்பருத்தி சூரணம்)

சேரும் சரக்குகள்:

வேலிப்பருத்தி இலை	-	4.2gm
சுக்கு	-	4.2gm
மிளகு	-	4.2gm
திப்பிலி	-	4.2gm

செய்முறை:

அனைத்து சரக்குகளையும் ஒவ்வொன்றாக சுத்தி செய்து எடுத்துக் கொண்டு . பின்பு ஒவ்வொன்றையும் தனித்தனியாக நன்கு வறுத்து எடுத்துக் கொண்டு பின்பு அனைத்து சரக்குகளையும் தனித்தனியாக இடித்து ஒன்று சேர்த்து வஸ்திரகாயம் செய்து எடுத்துக் கொள்ளவேண்டும்.

அளவு :

1கிராம் மூன்று வேளை சாப்பாட்டிற்கு பின்பு

அனுபானம்:

தேன்

தீரும் நோய்:

இருமல், இரைப்பு இளைப்பு நோய்

ஆயுட்காலம்:

மூன்று மாதம்

ஆதாரம்:

சரபேந்திரர் வைத்திய முறைகள் (KASA SWASA SIKITCHAI) காச சுவாச சிகிச்சை Page No : 108

DETAILS OF THE INGREDIENTS

வேலிப்பருத்தி : Veliparuthi

வேறு பெயர்கள் : உத்தாமணி, உத்தமமாகாணி, உத்தமகன்னிகை

Botanical name	:	Daemia extensa
Family	:	Asclepiadeaceae
Suvai	:	Kaippu
Thanmai	:	Veppam
Pirivu	:	Karppu
Action	:	Expectorant antihelmintic emitic

Habitat:

This common twiner is found throughout india

Parts used:

Leaves, roots and root bark

Constituents

Alkaloid – Daemine

- The Indian Materia Medica

இலையின் குணம்

உத்தா மணியிலையால் உள்வயிற்றுக் குன்ம மொடு
குத்தாம வலியுங் குளிரும் போம் பற்றி
இசிக்கும் வலி**யிரைப்பும்** எத்தடிப்பும் ஏகும்
பசிக்கு மதி மாந்தமும் பொம் பார்.

- அகத்தியர் குணவாகடம்

ஐய நோய்களாகிய, இரைப்பு (சுவாச காசம) இருமல் , கோழைகட்டல், குன்மம், வலி ஆகிய நோயகளை நீக்கும் பசித்தீ அதிகப்படும்

- அகத்தியர் குண வாகடம்

SUKKU

Botanical name	:	Zingiber officinalis
English	:	Dried ginger
Sanskrit	:	nagaram
Family	:	Zingibreraceae
Parts used	:	Scraped and dried rhizome
வேறுபெயர்கள்	:	அருக்கன், சுண்டி, ஆர்த்ரகம் , அதகம், கடுபத்ரம், விடமூடிய அமிர்தம் , வேர் கொம்பு
Suvai	:	karppu
Thanmai	:	Veppam
Pirivu	:	Karppu

Action	:	expectorant Stimulant Stomachic Carminative Digestive Sialogogue

Gunam

"சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் , **இரைப்பிருமல்** மூக்கு நீர ___ வால கப
தோடமதி சாரந் தொடர் வாத குன்ம நீர்த்
தோடம்ஆ மம்போக்குஞ் சுக்கு"

- குணபாட மூலிகைவகுப்பு

சூலை மந்தம், நெஞ்செரிச்சல் மூலம் , இரைப்பிருமல் , மூக்கு நீர் பாய்தல் , வாலகபம் , அதிசாரம் , தொடர்வாதம் ,குன்மம் ,போன்ற நோய்கள் நீங்கும்

Constituents : comphene, phelandrene, zingiberin cineol, borneol.

Uses: Cough, Bronchial Asthma, Cold, Dyspepsia, sinusitis, kaba diseases flatulence, colic, vomiting and spasms.

The indian materia medica

MILAGU

Botanical Name	:	Piper nigrum
Family	:	Piperaceae
வேறுபெயர்கள்	:	கலினை, கறி, கோளகம், காயம், திரங்கல் , மிரியல் , மலையாளி
Parts used	:	Dried unripe fruits

Suvai	:	Karppu, Kaippu
Thanmai	:	Veppam
Pirivu	:	Karppu
Actions	:	Expectorant
		Stimulant
		Carminative
		Antiperiodic

குணம்:

சீதசுரம் பாண்டு சிலேத்மங் கிராணி குன்மம்
வாதம் அருசி பித்தம் மாமூலம் - ஒது சந்தி
யாசமபஸ் மாரம் அடன் காசமிவை
நாசங் கறி மிளகினால்

அகத்தியர் குணவாகடம்

சீத சுரம், பாண்டு , கிராணி, குன்மம் , வாதம் , பித்தம் , மூலம் , சந்தி , அபஸ்மாரம் மேகம் , காசம் இவைகள் தீரும்.

THIPPILI

Botanical name	:	Piper longum
Family	:	Piperaceae
வேறுபெயர்கள்	:	ஆர்கதி , உண்சரம், ஆதிமருந்து, காமன் , குடோரி, கோழையறுக்கி கணை, மாகதி , கணம் , பாணம்
Parts used	:	Dried unripe fruits
Suvai	:	Enippu
Thanmai	:	Thatpam
Pirivu	:	Enippu

Action	:	Expectornt
		Stimulant
		Carminative
Constituents	:	Alkaloid - peperine
Uses	:	Bronchitis, swasam, kasam

குணம்:

"இருமல் குன்மம் **இரைப்பு** கயப்பிணி
ஈளை பாண்டு சந்யாசம் அரோசகம்
பொருமல் ஊதை சிரப்பிணி மூர்ச்சை நோய்
பூரிக்குஞ் சல தோடம் பீலீகமும்
வரும லப்பெருக் கோடு மகோதரம்
வாதம் ஆதி முத் தோடஞ் சுரங்குளிர்
பெருமா லைப்புரிமேகப் பிடகமும்
பேருந் திப்பிலி பேரங் குரைக்கவே

இருமல் குன்மம் , இரைப்பு , கபப்பிணி, ஈளை, பாண்டு , சந்நியாசம் , அரோசபம், பொருமல் , மூர்ச்சை, சலதோடம் , மகோதரம் வாதம் , பித்தம் , கபம் , சுரம் ,குளிர் , மேகம் ஆகியவை தீரும்

தேரன் குணவாகடம்
குணபாட மூலிகை வகுப்பு
The Indian Meteria Medica

II. THIRIKADATHY KASAYAM
(திரிகடாதி கசாயம்)

INGREDIENTS:

"சுக்கு திப்பிலி மிளகு தூதுவளை வட்டுச் சீந்தித்
தக்கவேரொன்று தானுஞ் சமனது சரியாய்க் கொண்டு
ஒக்க முன்னாழி தண்ணீர் ஒன்றதாயரைத்துக் கச்சி
நக்கவே நறு நெய் தேனில் நன்றதாய்க் காசம் போமே"

- அகஸ்தியர் - 2000

சுக்கு	-	10gm
மிளகு	-	10gm
திப்பிலி	-	10gm
தூதுவளைவேர்	-	10gm
சீந்தில் கொடி	-	10gm

செய்முறை:

மேற்கண்ட சரக்குகளை நன்றாக சுத்தி செய்து எடுத்துக் கொண்டு அனைத்து சரக்குகளையும் சம அளவில் எடுத்து ஒன்றிரண்டாக இடித்து எடுத்தக் கொண்டு பின்பு அதில் 8 பங்கு தண்ணீர் விட்டு கொதிக்க வைத்து 1 பங்காக வற்றியதும் தேன் , நெய் சேர்த்து வடிகட்டி எடுக்க வேண்டும்.

அளவு :

30ml இருவேளை

தீரும் நோய் : மந்தார காசம் (Mandhara kasam)

Reference : Agasthiar 2000 page No 371

DETAILS OF THE INGREDIENTS

SUKKU

Botanical Name	:	Zinziber officinalis
English	:	Dried Ginger
Family	:	Zingiberaceae
Parts used	:	Scraped and dried rhizome
வேறுபெயர்கள்	:	அருக்கன் , சுண்டி , ஆர்த்ரகம் , அதகம் , கடுபத்ரம் , விடமூடிய அமிர்தம் , வேர் கொம்பு
Suvai	:	Karppu
Thanmai	:	Veppam
Pirivu	:	Karppu

Action

Expectorant
Stimulant
Stomachic
Carminative
Digestive
Sialogogue

Gunam

“சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் , **இரைப்பிருமல்** மூக்கு நீர் -வால கப
தோடமதி சாரந் தொடர் வாத குன்ம நீர்த்
தோடம்ஆ மம்போக்குஞ் சுக்கு”

- குணபாட மூலிகைவகுப்பு

சூலை மந்தம், நெஞ்செரிச்சல் மூலம் , இரைப்பிருமல் , மூக்கு நீர் பாய்தல் , வாலகபம் , அதிசாரம் , தொடர்வாதம் ,குன்மம் ,போன்ற நோய்கள் நீங்கும்.

Constituents : Camphen, Phellandrene, Zingiberene, Cineol borneol

Uses :

Cough , Bronchial Asthma , cold Dyspepsia, sinusitis, Kaba diseases flatulance, colics, vomiting spasms are relieved

- The indian Materia Medica

MILAGU

Botanical Name	:	Piper nigrum
Family	:	Piperaceae
வேறுபெயர்கள்	:	கலிணை , கறி ,கோளகம் , காயம் , திரங்கல், மிரியல் மலையாளி
Parts used	:	Dried unribe fruits
Suvai	:	Karppu Kaippu
Thanmai	:	Veppam
Pirivu	:	Karppu
Constituents	:	Alkaloid Piperin piperidine

Actions :

Expectorant
Stimulant
Carminative
Antiperiodic

குணம்:

சீதச்சுரம் , பாண்டு சிலேத்மங் கிராணி குன்மம்
வாதம் அருசி பித்தம் மாமூலம் - ஓது சந்தி
யாசமபஸ் மாரம் அடமேகம் காசமிவை
நாசங் கறி மிளகினால்

- அகததியர் குணவாகடம்

சீதசுரம் , பாண்டு , கிராணி, குன்மம் , வாதம் , பித்தம் , மூலம் , சந்நி, அபஸ்மாரம், மேகம், காசம் இவைகள் நீங்கும்

THIPPILI

Botanical Name	:	Piper longum
Family	:	Piperaceae
வேறுபெயர்கள்	:	ஆர்கதி, உண்சரம், ஆதிமருந்து , காமன் , குடோரி , கோழையறுக்கி , கணை, மாகதி , கணம் , பாணம்
Parts used	:	dried unripe fruits
Suvai	:	Enippu
Thanmai	:	Thatpam
Pirivu	:	Enippu
Costituents	:	Alkaloid peperine
Action	:	Expectorant Stimulant Carminative

Uses:

Bronchitis, Swasam, Kasam

குணம்:

இருமல் குன்மம் , இரைப்பு கயப்பிணி
ஈளை பாண்டு சந்யாசம் அரோசம்
பொருமல் ஊதை சிரப்பிணி மூர்ச்சை சோய்
பூரிக்குஞ் சலதோடம் பீலீகமும்
வருமலப் பெருக் கோடு மதோதரம்
வாதம் ஆதிமுத் தோடஞ் சுரங்குளிர்
பெருமா லைப்புரி மேகப் பிடகமும்
பேருந் திப்பிலி பேரங் குரைக்கவே

இருமல் , குன்மம் இரைப்பு , கபப்பிணி , ஈளை , பாண்டு , சந்நியாசம் அரோசகம் , பொருமல் மூர்ச்சை, சலதோடம் , மகோதரம் வாதம் , பித்தம் , கபம் , சுரம் , குளிர் மேகம் ஆகியவை தீரும்.

- தேரன் குண வாகடம்
- குணபாட மூலிகை வகுப்பு
- The Indian Materia Medica

THOOTHUVALAI

Botanical Name	:	Solanum trilobatum
Family	:	Solanaceae
வேறு பெயர்கள்	:	அளர்க்கம் , சிங்கவல்லி
Suvai	:	kaippu
Thanmai	:	Veppam
Pirivu	:	Karpu
Actions	:	Expectorant
		Stimulant
		Tonic

Uses:

Asthma, Tuberculosis, All lung diseases

குணபாட மூலிகை வகுப்பு ,

The Indian Materia Medica

SEENTHIL

Botanical Name	:	Tinospora cordifolia
Family Name	:	Menispermaceae
வேறுபெயர்கள்	:	அமிர்த வல்லி , சோமவல்லி, அமிர்தை, குண்டலி, அமிர்தக்கொடி
Suvai	:	Kaippu
Thanmai	:	Veppam
Pirivu	:	Karppu

Parts used : Stem and root

Constituents : Berberine

Action : Antiperiodic
Alteraitve
Stimulant
Stomachic
Tonic
Diuretic

குணபாட மூலிகை வகுப்பு
The Indian materia medica

HONEY

Action:

Expectorant
Laxative
Stomachic
Sedative
Digestive

பற்பம் , செந்தூரம் , சூரணம், குடிநீர் போன்றவைகளுக்கு தேன் ஒரு சிறந்த துணை மருந்து அ.்து அனுபானப் பொருள் மட்டுமின்றி அவிழ்தப் பொருளுமாகி , தேகத்தை நன்னிலையில் வைத்து வாத முதலிய முக்குற்றங்களையும் போக்கும் தன்மையுடையது

"அனுபான மாய்ப்பின் அவிழ்தமுமாய்த் தோன்றி
கனமான தேகநிலை காட்டிப் பினுமே
யரசன் முதல்வோ ரைமாட்டு வித்தலாலே
பிரசத் தினாற் போம்பிணி"

தேரன் பொருள் பண்பு நூல்
தாது சீவ வகுப்பு

NEI

Gunam

தாகமுழ லைசுட்கம் வாந்திபித்தம் வாயுபிர
மேகம் வயிற் றெரிவு விக்கலழல் மாகாசங்
குன்மம் வறட்சி குடற்புரட்ட லஸ்திசுட்கஞ்
சொன் மூலம் போக்கு நிறைத் துப்பு

தாகம் ,உழலை, பிணி, அதிசுட்க ரோகம் , வாந்தி பித்தம் , வாயு, விரண பிரமேகம், வயிற்றெரிவு , விக்கல் , அழல் , காசம் ,குன்மம் , வாதவிஷம் வறட்சி , குடல் புரட்டல், மூலம் போக்கும்

- தாது சீவ வகுப்பு

BIO – CHEMICAL ANALYSIS

VELI PARUTHI CHOORANAM

Preparation of the extract:

5 gram of chooranam was weighed accurately and placed in a 50 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it was made up to 100ml distilled water. This fluid was taken for analysis.

S. No	Experiment	Observation	Inference
1	**TEST FOR CALCIUM:** 2 ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% Ammonium oxalate solution is added.	No white Precipitate is formed	Absence of Calcium
2.	**TEST FOR SULPHATE:** 2 ml of the extract is added to 5% barium Chloride solution	white Precipitate is formed	indicates the presence of sulphate
3.	**TEST FOR CHLORIDE:** The extract is treated with silver nitrate solution	No white Precipitate is formed	Absence of Chloride
4.	**TEST FOR CARBONATE:** The Substance is treated with concentrated HCL	No brisk effervescence is formed	Absence of Carbonate

5.	**TEST FOR STARCH:** The extract is added with weak iodine Solution	No Blue Colour is formed	Absence of Starch
6.	**TEST FOR IRON:** Ferric: the extract is treated with glacial acetic acid and potassium Ferro cyanide	No Blue colour is formed	Absence of Ferric Iron
7.	**TEST FOR IRON:** Ferrous: The extract is treated with concentrated Nitric acid and ammonium thio cynate	Blood red colour is formed	Indicates the presence of Ferrous Iron
8.	**TEST FOR PHOSPHATE:** The extract is treated with ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate
9.	**TEST FOR ALBUMIN:** The extract is treated with Esbach's reagent	No yellow precipitate is formed	Absence of Albumin
10.	**TEST FOR TANNIC ACID:** The extract is treated with ferric chloride	No Blue black precipitate is formed	Absence of Tannic Acid
11.	**TEST FOR UNSATURATION:** Potassium permanganate solution is added to the extract	It gets decolourised	Indicates the presence of unsaturated compound

12	**TEST FOR REDUCING SUGAR:** 5 ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	Colour change occurs	Indicates the presence of Reducing Sugar
13.	**TEST FOR AMINO ACID:** One or two drops of the extract is placed on a filter paper and dried it well. after drying 1% Ninhydrin is sprayed over the same and Dried it well	Violet colour is formed	Indicates the presence of Amino acid

BIO – CHEMICAL ANALYSIS

THIRIKADATHY KASAYAM

Preparation of the extract:

5 gram of chooranam was weighed accurately and placed in a 50 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it was made up to 100ml distilled water. This fluid was taken for analysis.

S. No	Experiment	Observation	Inference
1	**TEST FOR CALCIUM:** 2 ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% Ammonium oxalate solution is added.	No white Precipitate is formed	Absence of Calcium
2.	**TEST FOR SULPHATE:** 2 ml of the extract is added to 5% barium Chloride solution	white Precipitate is formed	Indicates the presence of sulphate
3.	**TEST FOR CHLORIDE:** The extract is treated with silver nitrate solution	white Precipitate is formed	Indicates the presence of Chloride
4.	**TEST FOR CARBONATE:** The Substance is treated with concentrated HCL	No brisk effervescence is formed	Absence of Carbonate
5.	**TEST FOR STARCH:**		

	The extract is added with weak iodine Solution	No Blue Colour is formed	Absence of Starch
6.	**TEST FOR IRON:** Ferric: the extract is treated with glacial acetic acid and potassium Ferro cyanide	No Blue colour is formed	Absence of Ferric Iron
7.	**TEST FOR IRON:** Ferrous: The extract is treated with concentrated Nitric acid and ammonium thio cynate	Blood red colour is formed	Indicates the presence of Ferrous Iron
8.	**TEST FOR PHOSPHATE:** The extract is treated with ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate
9.	**TEST FOR ALBUMIN:** The extract is treated with Esbach's reagent	No yellow precipitate is formed	Absence of Albumin
10.	**TEST FOR TANNIC ACID:** The extract is treated with ferric chloride	Blue black precipitate is formed	Indicates the presence of Tannic Acid
11.	**TEST FOR UNSATURATION:** Potassium permanganate solution is added to the extract	It gets decolourised	Indicates the presence of unsaturated compound

12	**TEST FOR REDUCING SUGAR:** 5 ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	Colour change occurs	Indicates the presence of of Reducing Sugar
13.	**TEST FOR AMINO ACID:** One or two drops of the extract is placed on a filter paper and dried it well. after drying 1% Ninhydrin is sprayed over the same and Dried it well	Violet colour is formed	Indicates the presence of Amino acid

PHARMACOLOGICAL ANALYSIS

ANTI SPASMODIC EFFECT OF THE VELIPARUTHI CHOORNAM ON ISOLATED RABBIT ILEUM

Preparation of the test drugs

Veliparuthi Choornam

2 gm of Veliparuthi choornam was mixed with 10ml of water . This 1ml contain 200mg and taken for the experiment.

Concentration of acetylcholine:

10 Microgram in 1 ml of solution.

Record drum Speed

0.12mm/sec

Method

A rabbit weighing about 450gm was starved for 48 hours. It was killed by stunning with a sharp blow, below the head and cutting its throat to bleed it to death. The abdomen was quickly opened and the viscera inspected and loops of intestine identified using the patch as a landmark. The ileum was removed and placed in a shallow dish containing warm aerated tyrode solution. With the help of a 25ml pipette the lumen of the ileum was gently rinsed out with saline. It was cut to segments of required length, generally 4cm in the fully relaxed state and sutures were made with a needle and tied on either end and the segment was suspended in an isolated organ bath.

It was aerated by an oxygen tube and immersed in tyrode solution at 37^0C. Drugs were given to study the inhibitory effect to acetyl cholin (10 microgram/ml) induced contraction. The sensitivity of the tissue response was recovered by adding acetyl choline

At first to 0.2ml, 0.6ml , 0.8ml and 1ml of acetyl choline were recorded. Then 0.5ml of the test drug and 0.2ml of acetyl Choline was given. Then 1ml of test drug was added and then 0.2ml acetyl Choline was added waited for 1minute and added to 0.2ml acetyl choline alone and the response was recorded.

Inference

It is antagonist to the action of acetyl Choline. Hence Veliparuthi choornam has got antispasmodic action. Therefore the Veliparuthi Choornam has got a good Antispasmodic action.

ANTI HISTAMINIC EFFECT OF VELIPARUTHI CHOORNAM

Aim

To study the antihistaminic effect of " Veliparuthi Choornam".

Preparation of the trial Medicine

1 gm of Veliparuthi Choornam was taken and mixed with 5ml of water and filtered

Procedure

A guinea pig weighing about 350gm was starved for 48 hours and only water was allowed.

It was killed by stunning with a sharp blow on the head and cutting its throat to bleed to death. The abdomen was quickly opened and the viscera inspected and loops of intestine identified using the patch as a landmark. Then the ileum was removed and placed in a shallow dish containing warm tyrode solution (37^0C) and continuously aerated . The contents of the lumen of the ileum were washed and utmost care was taken to avoid any damage. It was cut into segments of 4cm in a fully relaxed state and sutures were made with needle and tied on either side and the segment was suspended in an isolated organ bath . It was aerated by an oxygen tube immersed in tyrode solution. Drugs were given to study the inhibitory effect of histamine – induced contractions.

Inference

It is antogonist to the effort of contraction of histamine. Therefore that veliparuthi choornam has got moderate effect of antihistamine action.

II. ANTI SPASMODIC EFFECT OF THIRIKADATHY KASAYAM

Preparation of the test drugs

Thirikadathy Kasayam

10ml of Kasayam was prepared and then it was filtered and taken for the experiment.

Concentration of acetylcholine:

10 Microgram in 1ml of solution

Record drum speed

0.12mm/sec

Method

A rabbit weighing about 450 gm was starved for 48 hours. It was killed by stuning with a sharp blow, below the head and cutting its throat to bleed it to death. The abdomen was quickly opened and the viscera inspected and loops of intestine identified using the patch as a landmark, the ileum was removed and placed in a shallow dish containing warm aerated tyrode solution . With the help of a 25ml pipette the lumen of the ileum was gently rinsed out with saline. It was cut the segments of required length, generally 4cm, in the fully relaxed state, and sutures were made with a needle and tied on either end and the segment was suspended in an isolated organ bath.

It was aerated by an oxygen tube and immersed in tyrode solution, solution at 37^0C. Drugs were given to study the inhibitory effect to acetyl choline (10 micro gram/ml) induced contraction.

At first, responses due to 0.2ml , 0.6ml,0.8ml and 1ml of acetyl choline were recorded. Then 0.5ml of the test drug and 0.2ml of Acetyl choline was added waited for 1 minute and added 0.2ml acetyl choline alone and the response was recorded.

Inference

It is antagonist to the action of acetyl choline hence there for the Thirikadathy kasayam has got a moderate antispasmodic action.

ANTI-HISTAMINIC EFFECT OF "THIRIKADATHY KASAYAM"

Aim

To study the antihistaminic effect of " Thirikadathy Kasayam"

Preparation of the trait medicine

10ml of kasayam was prepared and then it was filtered and taken for the experiment

Procedure:

A guinea pig weighing about 350gm was starved for 48 hours and only water was allowed

It was killed by stunning with a sharp blow on the head and cutting its throat to bleed to death . The abdomen was quickly opened and the viscera inspected and loops of the intestine identified using the patch as a landmark. Then the leum was removed and placed in a shallow dish containing warm tyrode solution(37^0C) and continuously aerated . The contents of the lumen of the ileum were washed and utmost care was taken to avoid any damage. It was cut into segments of 4 cm in a fully relaxed state and sutures were made with needle and tied on either side and the segment was suspended in an isolated organ bath. It was aerated by an oxygen tube immersed in tyrode solution. Drugs were given to study the inhibitory effect of histamine induced contractions.

Inference:

It is antogonist the effect of contraction of histamine. Therefore that Thirikadathy kasayam has got moderate effect of anti histaminic action.

MICROBIOLOGICAL STUDIES

ANTI MICROBIAL STUDY OF VELIPARUTHI CHOORNAM AND THIRI KADATHY KASAYAM

AIM:

To study the antimicrobial action of Veliparuthi choornam and Thirikadathy kasayam

Procedure:

To prepare the choornam and kasayam 20mg and 40mg concentration of the drugs, and 2 grams , of the drugs were dissolved in 1ml of sterile distilled water and from this master dilution 20 micro litre and 40 micro litre were loaded on the disc.

Preparation of standard strains

Standard laboratory referral strains such were initially grown in nutrient agar and maintained at 37^0C.

Before antibacterial testing each strain was inoculated in 5ml of Brain heart Infusion (B.H.I) Brothe and incubated at 37^0C for 30 minutes.

Antibacterial activity testing by disc diffusion method

For antibacterial activity 90mm pertiplates of Muller Hinton. Agar (M.H.A) was used, for each organism, one M.H.A plate was used . The organisms grown in B.H.I Brothe was poured on the M.H.I plate and allowed to spread uniformly. The excess brothe was drained aseptically.

The disc which contain 20mg and 40mg concentration of drug were placed on the M.H.A and incubated at 37^0C for 24 hours

Interpretation

Readings were taken after 24 hours of incubation . The inhibitory zone diameter was measured in millimeter scale.

Results

Veliparuthi choornam and Thirikadathy kasayam was compared with standard antibiotics . The medicines were well sensitive against staphylococcus aureous.

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CASE SHEET PROFORMA FOR "**MANDHARAM KASAM**"

IP No	:	Occupation	:
Bed No	:	Income	:
Ward No	:	Nationality	:
Name	:	Date of admission	:
Age	:	Date of discharge	:
Sex	:	No.of Days IP Treated	:
Permanent address	:	Diagnosis	:
		Result	:
		Medical officer	:

Complaints and duration:

History of present illness:

History of past illness:

Personal history:

Family history:

Habits:

GENERAL EXAMINATION

Consciousness :
Decubitus :
Built :
Nutrition :
Anaemia :
Cyanosis :
Clubbing :
Jaundice :
Lymphadenopathy :
Pedal oedema :
JVP :
Engorged veins :
Congenital anamoly (if any) :
Miscellaneous :

VITAL SIGNS

Temperature :
pulse rate :
Heart rate :
Blood pressure :
Respiratory rate :

SIDDHA ASPECTS

NILAM

Kurinchi :
Mullai :
Marutham :
Neithal :
Palai :

PARUVA KAALAM

Kaar :

Koothir :

Munpani :

Pinpani :

Elavenil :

Muthuvenil :

UDAL NILAI

Vatha :

Pitha :

Kaba :

Kalappu :

GUNAM

Sathuvagunam :

Rajogunam :

Thamogunam :

IMPORIGAL

Mei (skin) :

Vai (tongue) :

Kann (eyes) :

Mookku (nose) :

Sevi (ear) :

KANMENTHRIYAM

Kai :

Kal :

Vai :

Eruvai :

Karuvai :

KOSAM

Annamaya kosam :
(Ezhu Udal Kattukal)

Pranamaya kosam :
(Pranan + Kanmendhirium)

Manomaya kosam :
(Manam + Gnanenthiriam)

Gnanamaya kosam :
(Puthi + Gnanenthirium)

Ananthamaya kosam :
(Pranan + Suluthi)

MUKKUTRAM

Vatha

Pranan :

Abanan :

Viyanan :

Udhanan :

Samanan :

Nagan :

Koorman :

Kirukaran :

Devathatahn :

Dhananjeyan :

Pitha

Anal pitha :

Ranjaga pitha :

Sathaga pitha :

Aalosaga pitha :

Pirasaga pitha :

Kaba

Avalambagam :

Kilethagam :

Pothagam :

Tharpagam :

Santhigam :

EZHU UDAR KATTUKAL

Saram :

Senneer :

Oon :

Kozhuppu :

Enbu :

Moolai :

Sukilam / Suronitham :

ENN VAGAI THERVUGAL

Naa (tongue) :

Niram (colour of skin) :

Mozhi (speech) :

Vizhi (eyes) :

Malam (motion) :

Moothiram (urine) :

Sparisam (palpation) :

Naadi (pulse) :

NEERKURI

Niram :

Edai :

Manam :

Nurai :

Enjal :

NEIKURI :

MODERN ASPECTS

Inspection

Palpation

Percussion

Auscultation

INSPECTION

1. Trachea :
2. Chest wall symmetry :
3. Chest wall abnormality :
4. Harrison's sulcus :
5. Apical impulse :
6. Spine :
7. Dilated tortuous blood vessels :
8. Pulsatile swelling :
9. Wasting :
10. Drooping of the shoulder :
11. Intercostal bulging :
12. Cold abscess :
13. Gynaecosmastia :
14. Respiratory movements :
15 Measurements : AP : Transverse :
16. Supra sternal pulsation :
17. Carotid pulse :
18. Juglar venous pulsation :

PALPATION

Confirmation of inspectory findings

1. Trials sign Tracheal position :
2. Apical impulse :
3. Respiratory movement :
4. Any thrill :
5. Tactile fremitus, Vocal fremitus :
6. Marking of spine :

PERCUSSION

1. Mediastinal widening :
2. Normal Cardiac & liver dullness :
3. Abnormal dullness :
    - Tidel Percussion
    - Ellis's shaped curve
    - Straight line dullness
    - Shifting dullness
    - Succusion splays
4. Tidel percussion :
5. Troup's space :
6. Obliteration of troup's space :
7. Kronics isthmus sign :

AUSCULTATION

1. Breath sounds
    - NVBS
    - Bronchial breathing
    - Amphoric
2. Aegophony
    - Whispering petrology
    - Vocal resonance
3. Addes sounds
    - Crepitation
    - Wheeze
    - Pleural rub

OTHER SYSTEM EXAMINATION

1. Cardio Vascular System :
2. Gastro Intestinal System :
3. Central Nervous System :
4. Musculo Skeletal System :

LAB INVESTIGATION

Blood :

	BT	AT
Sugar	:	
Urea	:	
Cholestrol	:	
TC	:	
DC	:	
ESR	:	
Hb %	:	

URINE

Albumin :

Sugar :

Deposits :

MOTION

Ova :

Cyst :

SPUTUM

AFB :

Mantoux Test :

X-ray Chest (PA View)

Treatment :

Diet :

Aviod :

Add :

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DISCHARGE CASE SHEET PROFORMA FOR "**MANDHARAM KASAM**"

IP No	:	Occupation	:
Bed No	:	Income	:
Ward No	:	Nationality	:
Name	:	Date of admission	:
Age	:	Date of discharge	:
Sex	:	Diagnosis	:
Permanent address	:	Result	:
		Medical officer	:

CLINICAL PICTURES

NO	SIGNS AND SYMPTOMS	DURING ADMISSION	DURING DISCHARGE
1	Running Nose		
2	Sneezing		
3	Difficulty in breathing		
4	Cough with expectoration		
5	Tightness of the chest		
6	Clubbing		
7	Cyanosis		
8	Sweating		
9	Tachycardia		
10	Fever		
11	Eosinophils		
12	Peak flow mater reading		
13	Other, if any		

OP No during follow up :

No. of days IP treated :

Followed up as OP :

Total no of days treated :

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CASE SHEET PROFORMA FOR "**MANDHARAM KASAM**" FOR OUT-PATIENTS

OP No	:	Occupation	:
Name	:	Income	:
Age	:	Treatment starting date	:
Sex	:	End of the treatment date	:
Address	:	No of days treated	:
		Diagnosis	:
		Medical officer	:

COMPLAINTS AND DURATION

C/o Running Nose	:
C/o Sneezing	:
C/o Difficulty in breathing	:
C/o Cough with expectoration	:
C/o tightness of the chest	:
C/o Fever	:
C/o Sweating	:
C/o Tachycardia	:
C/o Sputum	:
Duration of illness	:

GENERAL EXAMINATION

Temperature	:
Blood pressure	:
Pulse rate	:
Heart rate	:
Respiratory rate	:

Anaemia

Jaundice

Oedema

Cyanosis

Clubbing

Generalized lymphadenopathy

BREATH SOUNDS:

Added sounds:

ENVAGAI THERVUGAL:

Naa :

Niram :

Mozhi :

Vizhi :

Malam :

Moothiram :

Sparisam :

Naadi :

LAB INVESTIGATIONS :		B.T.	A.T.
Blood :	Sugar :		
	Urea :		
	Cholesterol :		
	TC:		
	DC:		
	ESR:		
	Hb%:		
Urine :	Albumin :		
	Sugar :		
	Deposits :		

SPUTUM FOR AFB:

Mantoux Test: X-ray Chest (PA view)

Treatment :

Diet :

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27. Laboratory Investigation:-

Table 27-A, 27-B, 27-C and 27-D illustrate the laboratory investigation.

Table 27-A

Sl.No	IP NO	Name	Age	Sex	Duration of Illness in years	DOA	DOD	No of days treated			Blood sugar (mg%)	Blood urea (mg%)	Serum Cholesterol (mg%)	X-Ray chest PA view	Sputum AFB	Mantoux test	Result
								As In patients	As op follow up	Total							
1	2091	Vempu	43	F	6 months	09.09.06	17.09.06	9	18	27	80	30	160	Normal	Negative	Negative	Fair
2	1975	Mani	52	M	3 months	26.08.06	21.09.06	27	19	46	90	30	180	Normal	Negative	Negative	Fair
3	2121	Kannammal	23	F	9 months	13.09.06	24.09.06	12	21	33	83	21	160	Normal	Negative	Negative	Good
4	2071	Krishnammal	65	F	9 years	07.09.06	29.09.06	23	15	38	89	25	224	Normal	Negative	Negative	Good
5	2163	Sollamadi	65	F	1 year	18.09.06	04.10.06	17	11	28	95	17	170	Bronchitis	Negative	Negative	Fair
6	2202	Nachiarammal	71	F	10 years	22.09.06	05.10.06	14	11	25	103	22	180	Normal	Negative	Negative	Fair
7	2135	Vetrivel	60	F	9 years	14.09.06	06.10.06	23	8	31	75	42	196	Normal	Negative	Negative	Good
8	2192	Poomani	45	F	15 days	21.09.06	06.10.06	16	8	24	83	23	160	Normal	Negative	Negative	Good
9	2221	Muthupanti	65	M	1 year	26.09.06	07.10.06	12	8	20	93	18	154	Normal	Negative	Negative	Fair
10	2200	Eswara vadivoo	70	F	10 years	22.09.06	09.10.06	18	6	24	80	28	180	Normal	Negative	Negative	Good
11	2213	Gnan Mani	30	F	1 year	25.09.06	09.10.06	15	6	21	80	35	180	Normal	Negative	Negative	Good
12	2264	Subbammal	65	F	1 year	03.10.06	10.10.06	8	6	14	80	35	180	Normal	Negative	Negative	Fair
13	2216	Antonymmal	45	F	3 months	25.09.06	11.10.06	17	5	22	235	19	179	Normal	Negative	Negative	Fair
14	2189	Arumugam	65	M	12 years	20.09.06	13.10.06	24	5	29	82	18	180	Normal	Negative	Negative	Fair
15	2168	Pandi	60	M	12 years	19.09.06	13.10.06	25	5	30	100	22	160	Bronchitis	Negative	Negative	Poor